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Property Development 101: Construction Guide

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Property Development 101: Construction

Overview

Construction is where the project, which was previously mere conceptual, now manifests into reality. The construction process is not just about bricks and mortar. Therefore, it is important that a developer has foundational knowledge in a number of areas, namely:

- How to select contractors
- How construction contracts operate
- The construction process itself

Contractor Selection

A contractor is an organisation or entity that co-ordinates the resources necessary to undertake building and construction works. The coordination process includes outsourcing certain tradespeople (referred to as subcontractors) required to physically carry out the work. For the intent and purposes of this article, 'contractor' and 'builder' are interchangeable. Historically, there was a distinction where builders directly employed labourers to carry out work and contractors would entirely delegate. However, this is no longer the case in the modern construction industry.

Given the cost, complexity and consequences associated with such an important stage of the project, it is vitally important that the developer conduct rigorous due diligence to ensure



that the right contractor is briefed to ensure a smooth construction process.

This section will canvass the following key points:

- Tiers of contractors
- Due diligence process
- Tendering

Tiers Of Contractors

Before considering selection processes, developers must understand that, in the construction industry, there are three tiers of contractors.

Tier I contractors are the largest and most experienced contractors in the industry. They typically do large-scale commercial and infrastructure projects including roads, railway, tunnels, hospitals, universities, office towers, and shopping centres. Most developers will never retain them.

Tier 2 contractors are mid-tier players who take on commercial projects and large-scale residential projects. They usually specialise in a certain area such as shopping centres, industrial buildings, and apartment blocks.

Tier 3 contractors are anyone who is not tier 1 or tier 2. Most developers will inevitably be Tier 3 developers to carry out projects. They are typically used for residential buildings and small-scale commercial developments. The issue with Tier 3 contractors is that their education, training and experience vary wildly. Hence, strict selection criteria need to be implemented to ensure that the right contractor is selected to carry out the project works.



Tendering

Tendering is the process where prospective contractors submit proposals to the developer to undertake or manage a construction project. Such a proposal is called a 'tender' and is intended to respond to criteria and requirements set out by the developer with regards to the project.

Tendering is useful where projects are complex and where there are a number of builders that are potentially suitable candidates.

Types Of Tenders

There are three types of tenders:

- Open tenders
- Selected tenders
- Negotiated tenders

Open tendering is where the developer advertises the project and allows any potential contractor to submit tenders. To streamline the process, the developer may request deposits from applicants which will be returned if a bona fide tender is made.

In terms of advantages and disadvantages, the main advantage of open tendering is that competition is maximised, and the developer has the most choice. However, there are disadvantages to be aware of. Firstly, open tendering may result in the developer engaging in a time, energy, and resource consuming process of filtering out many candidates that are unsuitable for the project. Secondly, because tendering, by nature, is also an intensive process for contractors, the



contractors may not study the relevant documentation in detail and quote an unrealistic figure to win the work. If this issue cuts across all potential contractors tendering for the work, the developer may be lulled into a false sense of security in relation to the true costs of the project.

Selective tendering involves the developer preparing, with or without collaboration from consultants, a short list of potential contractors. Those on the shortlist are then invited to tender for the project.

Selective tendering can also form a subset of an open tendering process where developers can use pre-qualification processes to shortlist suitable candidates from an open field. This shortlist of candidates will subsequently be invited to tender.

The advantage to the developer is that they can select pre-qualified candidates that could all be potentially a good fit for the project (i.e. with relevant experience, financial soundness, and adequate resources for the project). As such there is less wasted effort and time that would otherwise have been exerted in an open tendering process. Given the screening process, selective tendering is especially effective where the project is complex and/or specialised.

Nevertheless, selective tendering is not foolproof. A successful contractor's circumstances may change over time. Losses on other contracts may prejudice their financial situation. Unexpected success may render them under-resourced to do the work adequately. Furthermore, lesser known contractors that are more cost-effective may be excluded in favour of more well-known contractors.

Also known as 'invited tendering', negotiated tendering involves the developer directly inviting one or more contractors of choice to quote for the work. This type of tendering is usually adopted



for specialised work, emergency work, extending the scope of an existing contract, or off-the-shelf standardised tasks.

A negotiated tender can be beneficial with respect to obtaining an outcome in an efficient manner. Unlike open and selective tendering, the contractor submits his prices early in the process and there is a reasonable discussion of said prices where queries can be readily resolved. This allows for more accurate pricing done more quickly. Furthermore, negotiated tendering can be done much faster and therefore more cost effective than open or selective tendering.

Nevertheless, even though negotiated tendering may appear to be less formal than an open or selective tendering, it is usual practice for full contract documents to be prepared so that there is no ambiguity as to the parties' rights and obligations. Furthermore, if the nominated contractor is unable to carry out the work, those documents can form the basis for an open or selective tendering process to find a different contractor.

The main disadvantage of negotiated tendering is that it is less competitive than the other forms. The lack of competition also means the negotiations must be structured carefully to avoid an adversarial atmosphere. This is because, where there is no competition, if a contractor asserts that something needs to be done in a certain way at a certain cost, is it more difficult for the developer to verify that assertion than the situation where other contractors are available to provide second opinions.



Steps Of The Tendering Process

After deciding upon the type of tender to use, the following steps are typical of a tender process:

- Preparation of tender documents
- Invitation and shortlisting of candidates
- Reviewing of tenders
- Notification of successful and unsuccessful tenderers
- Contracts finalised and executed

Preparation Of Tender Documents

Preparing a project for tender can be an onerous process. However, it is a process that can be systemised through checklists and protocols. The tendering process is driven through an invitation to tender. The invitation to tender is a set of documents that formally invites suppliers (e.g. contractors) to offer goods and/or services.

An overarching principle is that invitations to tender should unambiguously demonstrate to tenderers what they are required to do (whether to follow plans and drawings verbatim or to establish a functional and cost-effective solution).

Typically, an invitation to tender should contain the following documents.

• Covering letter



- Drawings
- Specifications
- Scope of work
- Construction contract
- Bill of quantities

Invitations to tender may be preceded by questionnaires or a set of criteria that need to be satisfied by the prospective contractor. These measures are used to avoid wasting time and energy in assessing inappropriate tenders.

An invitation to tender should be presented in a format which allows for easy comparison between different tender responses.

Covering Letter

Covering letters to invitations to tender should contain a broad overview of the tendering process, enough for tenderers to put forward well-constructed responses.

Covering letters should include the following as a minimum:

- Details of the developer (e.g. name, ACN, ABN, and registered office).
- Details of key consultants (e.g. architects, engineers, quantity surveyors, etc).
- Location of the site.
- General description of the work (although not as detailed as a formal scope of work).
- Specific requirements of the work (e.g. conditions of a regulator's approval).



- A list of documents enclosed in the invitation to tender.
- Formatting specifications of responses.
- Timeframes and key milestones of the project.
- All known risks in relation to the project.
- Methods of lodgement of the tender.
- Guidance to tenderers on the selection process.
- Indicative timelines and deadlines for assessment of the tender.
- How enquiries from tenderers will be dealt with.
- Whether tenderers will be reimbursed for tender preparation costs and on what terms.
- The process going forward for the successful and unsuccessful tenderers.

Drawings And Schedules

The invitation to tender should contain a set of drawings and schedules that convey enough information for a tenderer to consider whether it has the capability and capacity to complete the works. Drawings and schedules may be prepared by different practitioners including architects, engineers, interior designers, landscape designers, and other suppliers and consultants.

Of course, the level of detail will vary depending upon the nature of the work. If the winning contractor is required to design and construct, drawings and schedules will be quite preliminary and more of a proof of concept to be refined over time. On the other hand, if the design is already complete, a full set of final drawings should be included.



Specifications

Specifications describe the materials and the levels of workmanship required for a development. However, they do not include cost or quantity (which a bill of quantities would) or drawn information (which would appear in drawings). As such, specifications must be accompanied by those other documents.

Like drawings and schedules, there are different types of specifications. Performance specifications are used where further design work needs to be done. They are open to change. Such specifications provide the winning contractor with the leeway to innovate and reduce costs. Prescriptive specifications are used where the design is already complete. They are locked in and no further changes are required. That said, such specifications give the contractor certainty about the project.

Scope Of Work

A scope of work is a key document that assists tenderers in understanding the work required. Scopes of work should be as detailed as possible to avoid ambiguity and potentially crippling costs, delays, and disputes further down the line.

A scope of work should contain, at a minimum, the following details:

- Brief overview of the project
- Identity of key stakeholders and their roles and responsibilities
- Description of the final product to be constructed
- Description of specific tasks required to complete the project
- The project schedule (timeframes, deadlines, etc)



- Specific exclusions (i.e. work that is not to be completed)
- Works that are not specifically excluded but are out of scope
- Relevant technical details to be considered
- Project management methods (e.g. payment methods, dispute resolution, legal requirements, etc).
- Reporting requirements of all parties involved.

Please note that a scope of works is distinct from specifications in that the scope of works is more task and timeline driven whilst the specifications are more materials and quality standards driven.

Construction Contract

A developer should include a copy of the proposed construction contract so that tenderers can understand what terms and conditions they will be subject to if they are successful. As will be discussed further, construction contracts can take many different forms depending on the project (e.g. lump sum, cost-plus, unit priced, etc).

Bill Of Quantities

Upon finalisation of the design drawings and construction specifications, a bill of quantities can be prepared. A bill of quantities (BOQ) is a document prepared by a quantity surveyor in which materials, parts, and labour (and their costs) are itemised. Quantities can be measured in a variety of units such as numbers, physical dimensions such as length, width, volume, and weight, as well as time.



The intent of the BOQ is to assist tenderers to accurately price the construction work. Assuming that the same bill of quantities is distributed to all tendering contractors, it should allow the developer to make proper comparisons between the tenderers on price.

Reports And Permits

Reports and permits are necessary for the tenderers to gain full understanding of the context by which the works are to be undertaken. In fact, most construction contracts require the developer to provide the contractor with such reports and permits as a condition of the works being completed.

Invitations And Shortlisting Of Candidates

To initiate the tendering process, developers can initiate the tender in the following ways:

- Request for information (RFI)
- Expressions of interest (EOI)
- Request for tender (RFT)
- Request for proposal (RFP)
- Builder brokers

An **RFI** is used essentially for planning and market research to assist in defining the project. It is required where the developer does not have enough information to write a detailed request.



There is no commitment to select suppliers at the end of the process. Usually, an RFI is followed by a more formal request once responses have been analysed.

An **EOI**, also known as a Registration of Interest (ROI) serves a similar purpose to an RFI in terms of gathering information. However, it is more focused on gauging the market's ability to supply or provide information before further progression. It is also used to shortlist potential contractors. Once the suitable contractors are found, invitations to tender seeking more detailed offers will be sent. That is, like an RFI, there is no commitment made to any given potential contractor.

An RFT is an invitation to tender used to appoint a contractor via formal response where the developer has very clearly defined criteria or specifications. There is a commitment to select a provider. That said, while an RFT usually contains a very specific scope, some of them encourage innovation via an 'alternative' bid subject to the tenderer providing a 'conforming' bid that conforms with the scope provided.

Although it serves the same purpose as an RFT, an RFP is used where the project is defined but there is no clear specification or solution and the developer is seeking a range of options or innovations. RFPs therefore provide greater flexibility than an RFT. Like an RFT, there is a commitment to select a provider.

As it can be seen above, a general progression is that the developer uses **RFIs** and **EOIs** to test the market and then follows up with RFTs or RFPs to select the appropriate contractor.

A builder broker is a person or business that arranges quotations for building projects by contractors in Australia. Essentially, the developer is delegating or outsourcing part of the selection process to an external third party. The broker should ideally have qualifications in the construction industry and understand building contracts. Builder brokers can



specialise in different fields such as residential, commercial or industrial construction.

Reviewing Tenders

Signs of a strong tender response include:

- Accurate costings: A developer may assess this by querying every line item (time permitting). Inaccurate costings can be caused by the tenderer being overly aggressive on costs and/or incorrect allocation of costs to items.
- Complete information: All questions should be completely answered, and the answers adequately supported with evidence. Unanswered, incomplete, or unsupported answers indicates a gap in capability of the tenderer and the work at hand. Nevertheless, tenderers should be given the opportunity to rectify this before a decision is made.
- Tailored responses: A tailored response demonstrates that the tender understands the specifications and requirements. In contrast, if the tender response looks generic and does not explicitly address the specifications and requirements, it is a sign of lack of understanding. However, if the tenderer subsequently queries the tender, this is a sign that the tender documents themselves are ambiguous.
- Professional presentation: This means little to no spelling, grammatical, and formatting mistakes.
- Timely submissions: Late submission generally indicates poor time management and/or lack of capacity to complete the work in an efficient and timely manner.



 Accurate evaluations of capacity: Tenderers should be mindful of whether they have adequate resources in terms of manpower, plant and equipment to complete the works as specified. If not, it is likely that extra (unnecessary) costs would be incurred to deploy the right equipment at the correct scale to complete the project. Questions should be asked in the invitation to tender seeking evidence that the tenderers have put their minds to this issue of capacity.

As an aside, a tenderer that is serious about winning the work should seek to visit the proposed construction site to fully understand and anticipate any issues that may arise in the construction process. A failure to visit the site could result in the tender response not taking such issues into account putting aside a lack of commitment on the tenderer's part.

Despite the above, the developer should proactively manage the tender process for best results. Developers should aim to make the tender process as fair, and unambiguous as possible. Where possible, they should clarify aspects of a tender and answer questions by potential tenderers and provide additional information if requested. However, the best way to make the most out of the process is to ensure that the scope or requirements of the project are set out as meticulously as possible before the tender process even begins.

Notification Of Successful And Unsuccessful Tenderers

When a contract has been awarded, both successful and unsuccessful tenderers should be advised in writing of the outcomes relevant to them. For a successful tenderer, such a notification is referred to as a letter of acceptance. As a matter of



procedural fairness, such notifications should be conducted in accordance with the rules set out in the invitation to tender.

Contracts Finalised And Executed

Once the successful tenderer has been notified, the developer will negotiate and finalise the construction contract. Such a contract should be executed by both parties prior to any work starting on the site. The proceeding section will discuss in detail the content and form of residential construction contracts.



Due Diligence Process

Whether or not tendering is involved in the project, a developer needs to ensure that the right contractor is selected. This section outlines the minimum steps that a developer must take when conducting due diligence which include:

- Legal checks
- Headline tests
- Experience and project history
- Site inspections
- Interviewing past and present clients

One of the most common mistakes (and arguably the most common mistake) made by developers is selecting a contractor based on cost alone. It is common for contractors to underquote to win the work and then to demand payments for variations when costs invariably exceed the quote. Sometimes, instead of demanding further payment, contractors may take shortcuts which affect the quality of the work. This has flow-on effects on the reputation of both the builder and the developer in an industry where reputation is particularly important to survival.

Legal Checks

The very first step in determining whether a given candidate is appropriate is to assess whether the contractor operates within legal and ethical boundaries. The developer should check whether the contractor is legally registered and licensed in the jurisdiction it operates. This includes both a licence number and any general business registration such an ABN. The developer



should check whether the contractor is not insolvent or bankrupt.

A developer should also check whether the builder holds valid insurance policies such as home warranty, workers compensation, and public liability. The different types of insurances required will vary by jurisdiction. It will be up to the developer to determine which insurances are relevant. The builder should be willing and able to provide copies of the policies which can then be verified by contacting the relevant insurers.

The developer should be provided with contact details including telephone numbers, physical mail, and email addresses, and email addresses that can be validated. Any invalid contact details imply unprofessionalism at best and potential illegality at worst.

Headline Tests

The developer should also use the 'headline test' by searching online whether the contractor and any of its directors or senior employees have negative headlines. For example, it is not uncommon for contractors who mismanage their business affairs to wind up their companies to avoid paying debts and completing work. Other red flags include a reputation for aggressively chasing payments, shoddy workmanship, and consistent excessive delays in projects.

A developer may wish to interview prospective contractors to ascertain whether the contractor is the right fit – like interviews between employers and employees. Unlike most other aspects of development which are very numbers driven and analytical, a developer should exercise their intuition. If something feels 'off', chances are, there is. Where possible, developers should aim to



bring one or more trusted persons when conducting interviews as a second person may provide further insights and cues.

Experience

The contractor should provide evidence of its experience and capabilities with regards to the type of project to be undertaken (e.g. 30 years of experience on townhouse projects). Reference should be made to specific past and present projects. The contractor should be willing to provide records in relation to any formal qualifications undertaken by key staff (e.g. degrees, diplomas, certificates, etc).

When speaking about projects, a developer should ask about timeframes, costs, and their approach. These representations should be cross-checked with other builders if possible assuming the developer seeks multiple quotes – which is a good practice in any case.

A contractor should also explain the communication process between the parties so that expectations can be set in this area. A successful project absolutely requires that the developer, consultants, and the contractor work closely throughout the construction process and beyond.

When the profile is provided, a developer should seek to validate the representations made. This validation can be done through online searches, communications and interviews with past and current clients who have undertaken or are undertaking similar projects, and time permitting, site inspections (further detailed below).

The developer should also request evidence of the contractor's financial situation. This includes information about its assets and liabilities. If the contractor has outstanding debts, the developer



should contact the contractor's lenders to ascertain their standing. It is also important to remember that lenders consider the identity and reputation of a contractor in deciding whether to approve loans for the project and on what terms.

The developer should enquire about the way the contractor deals with consultants such as architects and engineers especially whether the contractor does so regularly and in a timely manner. Miscommunications and lack of communication between consultants and the contractor can be potentially catastrophic. As such, a developer should only engage contractors who can collaborate effectively with consultants.

Site Inspections

An effective method of vetting a contractor is visiting a site upon which it is carrying out a project. When visiting a site, careful attention should be paid as to whether the site is clean and organised. A disorganised site usually translates to disorganised business practices generally. The saying 'how you do one thing is how you do everything' generally holds true in this context.

The developer should also assess whether the site is safe. This means looking out for hazards, whether the subcontractors have adequate safety measures to carry out their work, and whether there is adequate supervision. Workplace accidents can unnecessarily delay a project and render it less profitable.

The developer should also assess how much materials are wasted on site. If there is evidence of a large amount of wastage, there is a risk that the contractor will overrun its budgeted costs resulting in the developer paying more than necessary for the work.



For novice developers, it may be very useful to bring along a more experienced developer, builder or suitably qualified safety consultant to these site inspections.

Interviews

As mentioned above, a developer can benefit greatly from interviewing the contractor's previous and current clients. When interviewing them, the developer should focus on the contractor's:

- Reliability in meeting deadlines and commitments.
- Efficiency in conducting the project in a quick and cost-effective manner.
- Flexibility in dealing with issues as they arise.
- Capability with respect to the knowledge, training, and experience of employees and contractors.
- Quality in passing inspections and carrying out work in a committed manner.
- Accessibility in terms of being able to communicate openly and in a timely manner

It is prudent to interview more than one client if possible to obtain a second opinion. Furthermore, it is important to test whether the client is related to the builder to factor in any bias when determining how much weight to put on what is said.

It may be prudent for the developer to identify and interview key subcontractors to determine the contractor's reputation in the eyes of the subcontractors. In the topic of subcontractors, similar due diligence should be conducted on them as well (although not to the same degree as for the contractor as the



contractor should bear some risk of a subcontractor misbehaving). That said, if the project is a construction management arrangement (i.e. the developer retains each trade individually) there should be full, rigorous vetting of each trade as per a contractor.



Construction Contracts

This section seeks to educate the reader on the following:

- Types of contract
- Essential details of a construction contract
- An explanation of key concepts and provisions that typically appear in a contract

Types Of Contract

There are many different types of construction contracts and, even within one type of contract, different terms and conditions. In other words, no two construction contracts are the same. Contracts range from ones that are 'off the shelf' with minor variations to ones that terms are completely tailored from the ground up.

The final form of a construction contract will generally depend on the following factors:

- The nature of the project.
- The complexity of the project.
- The degree of trust between the parties.
- How well the scope of the project in terms of works and/or materials is defined.
- The timeframe of the project.

The three most common types of construction contracts: lump-sum, design and construct, and unit price contracts are outlined below. In addition, the concept of construction



management (which is not a form of contract in itself) is also canvassed.

Lump Sum

A lump sum contract (also known as a fixed price contract) is the most common type of contract used for residential construction. A contractor agrees with the developer to build a project with a specific scope for a specific price. However, the contract is not truly 'fixed price' because they inevitably contain provisions that allow the contractor to alter the price under certain conditions (e.g. costs exceeding provisional sums assigned to them).

That said a lump sum contract works well where the scope of the project is defined well enough for the contractor to estimate and provision for the necessary costs.

Sometimes, where the contractor does not have the capability to perform all the work required for the project, multiple lump sum contracts may be necessary. For example, if the contractor does not have sufficient experience in landscaping, there may be a contract for construction and a separate contract for landscaping.

When lending funds for projects, lender will typically expect the project to be completed via a lump sum contract. Lenders perceive these contractors to be relatively lower risk than other types of contracts.

Much of the discussion regarding key terms of a construction contract are focused on lump sum residential contracts given that they are the most common.



Cost-plus

A cost-plus contract is one where the developer pays for all actual costs incurred with respect of the project plus the contractor's profit. Unlike a lump sum contract, there are theoretically no caps on the cost of the project under this type of contract. This type of arrangement is riskier relative to a lump sum contract and is not viewed by lenders as favourably.

Cost-plus contracts are used where the scope of work and/or materials is uncertain or where the developer wishes to select its own subcontractors and/or buy their own materials.

Variations between different cost-plus contracts are usually expressed in terms of the amount allocated to the contractor's profit. The most common variations include:

- Cost plus fixed percentage: The fixed percentage is of the costs incurred.
- Cost plus fixed fee: The fixed fee is independent of the project cost.
- Cost plus fixed fee with guaranteed maximum price: This is a cost-plus fixed fee contract plus a contractual agreement that the project will not exceed a negotiated maximum price.
- Cost plus fixed fee with incentive payment: This is a cost-plus fixed fee contract with an incentive payment to the contractor if the project finishes ahead of schedule and/or under budget.
- Cost plus fixed fee with cost sharing agreement: This is a cost-plus fixed fee contract with an agreement where cost savings are shared between the developer and the contractor.



It needs to be noted that cost-plus contracts can have more than one special feature. For instance, it is possible to have a cost-plus fixed fee with guaranteed maximum price and an incentive payment. The exact permutations are driven by the factors mentioned above in the overview.

Design And Construct

A design and construct (D&C) contract involves the contractor being responsible for all design and construction work for the project. After the design phase is completed, the contractor supervises the construction process.

This contrasts to other types of contract where the developer engages various consultants to design the project (e.g. architects and engineers) under separate agreements and merely presents the finalised designs and drawings to the contractor to implement. In this case, it is the contractor's responsibility to coordinate the design team. Nevertheless, even where a D&C contract is in place, the developer should retain the right to approve and provide final sign-off for design.

For even greater convenience for the developer, a special type of D&C contract, the turnkey contract can be used. In a turnkey contract, the contractor not only designs and constructs the project but also finances it. The developer proceeds to pay the contractor in full at the completion of the project after which the contractor passes the keys of the project to the developer (hence the expression 'turnkey'). With a turnkey contract, the developer knows the exact cost of construction.

A key advantage of D&C contracts is simplification. There is a centralisation of responsibility to the contractor resulting in less conflict between the developer and the contractor as the contractor has greater input into the design process. As a result,



both the design and the construction process is shortened and costs are saved.

Furthermore, projects can be better suited design-wise to the construction site itself. This is because the contractor is likely to have better ground-level knowledge of the site than the developer when liaising with designers. This knowledge means less variations, and lower overall cost, as issues are more likely to have been anticipated by the contractor in the design phase. This can also contribute to the project being completed faster and cheaper.

However, D&C contracts do have drawbacks as well which result from the developer surrendering control. For example, the project is vulnerable to being botched if the contractor's team is inexperienced or otherwise unsuited to the project. Loss of control in the design phase can be catastrophic if the contractor decides to walk away from the project.

Secondly, contractors have an incentive of designing the project so that it is favourable to them rather than to the developer and/or the final buyers. Thirdly, if scheduling and accountability with respect to the contractor's activities, substantial delays (and costs associated with such delays) can mount considerably.

Unit Price

A unit price contract involves the developer and contractor pricing the work in a piecemeal fashion. The project scope is divided into a number of tasks or groups of tasks. A given quantity of such task(s) is assigned a value which includes all labour, material, equipment, and overhead. As the project continues, the contractor is paid for the quantity of each task performed (unit price times quantity).



Unit price contracts are used most commonly where construction involves repetitive and easily measurable tasks and is scarcely used in residential developments. However, it does make appearances where residential projects require, as part of development approval, the developer to construct infrastructure. In a project where infrastructure is involved, a unit price contract can be useful in avoiding the risk of negotiating a fixed price and being forced to renegotiate as more information comes to hand.

Construction Management

Construction management is where the developer directly contracts with specialist tradespeople who are managed by a construction manager. There is no 'contractor' in the usual sense. In a conventional developer/contractor relationship, these specialist tradespeople would have contracted with the contractor as subcontractors. The developer directly pays the subcontractors and also pays the construction manager.

With respect to the construction manager, the scope of the construction manager's work may vary from simply overseeing the project to full service (tendering, design, and construction). A construction manager will usually charge a fixed fee (sometimes with potential performance incentives) or an ongoing monthly fee.

Essential Details Of A Construction Contract

This section and the section relating to typical provisions of a construction contract focus upon residential building contracts



in Australia. Nevertheless, most construction contracts should cover the same fundamental principles (e.g. variations, indemnities, etc) that need to be accounted for.

It is also important to note that certain aspects of construction contracts are subject to the laws of their jurisdiction (e.g. progress payments, variations, etc). As such, a legal review of proposed contract documents is a must before signing one.

Aside from reviewing the provisions of the contract itself, a developer (and their lawyer) needs to check that the contract contains the following as a minimum:

- The correct name of the developer (e.g. ABC Developments Pty Ltd) and any business identifiers such as ABNs.
- The correct name of the contractor (e.g. DEF Buildings Pty Ltd) and any business identifiers.
- The contractor's licence number(s).
- The contractor's address and contact details.
- The title details of the site. In particular, the name of the developer on the contract must match the name on the title documents.
- A precise scope of works to be completed by the contractor.
- An accurate list of the materials supplied and/or work done by the owner where applicable.
- All details of fittings, fixtures, and finishes and pricing if possible.
- An exhaustive set of the latest plans and/or specifications and any other relevant documents that the contractor needs to carry out the project.



- The intended commencement date or the basis for commencement (e.g. 'construction must commence within 14 working days after obtaining building approvals').
 See below for further discussion.
- The intended completion date or basis for completion (e.g. 'the contractor must complete the work within 26 calendar weeks from the date the work is due to commence'). See below for further discussion.
- The contract price and whether it is inclusive or exclusive of taxes such as GST. If the contract price is unknown the contract must contain a warning to that effect.
- The deposit amount required by the builder in currency (not percentages).
- The amounts of progress payments in currency and their timing.
- All allowances such as prime cost and provisional sums set out in separate schedules (see below for further discussion).
- Any guides or factsheets required by law.
- If there are terms and phrases in the contract that are highlighted, they are clearly defined in a glossary or a dictionary clause.
- All pages must be numbered preferably in the format 'Page X of Y'.
- Signatures of both parties to make the contract binding.
- All appendices and annexures referred to in the main contract document should be present.



It is recommended that all significant currency amounts such as the contract price and the deposit amounts are in words not figures (e.g. 'one million dollars' rather than '\$1,000,000').

If there are any deviations or omissions from any of the above, a legal review of the contract is highly recommended given the amounts of money involved.

Key Concepts And Provisions

Even though construction contracts will invariably vary from project to project, there are certain fundamental provisions and concepts that developers need to have a basic understanding of. The section below should be regarded as a checklist of things that a developer needs to look out for in a contract. If, upon review of a contract, it is clear any of the below are missing, appear unusual, or heavily favour the contractor, the developer should consult a lawyer who specialises in these types of contracts to discuss a negotiation strategy with the contractor.

Warranties And Acknowledgments

Construction contracts should contain key warranties and acknowledgments some of which are mandated by the law in the jurisdiction. A lawyer should be engaged to ensure that those warranties and acknowledgments are present.

These include that:

• All work done will be in accordance with the plans and specifications in the contract (including agreed variations).



- All work done under the contract will comply with building and other codes, standards and specifications that are required by law.
- All work done complies with any relevant development consent.
- The contractor will comply with all relevant statutory warranties.
- The contractor will comply with council requirements and requirements of other statutory bodies.
- Materials provided will be of good quality and suitable for purpose.

If any of these warranties are missing, a developer should consider a legal review to ensure that they are not prejudiced by the omission(s).

Commencement

A construction contract should always have a provision in relation to commencement of the works. This commencement provision should clearly set out the basis for commencement. Examples include:

- Within X days/weeks/months of the date of the contract.
- Within X days of written approval of the local council or other statutory authority necessary to carry out the works.
- Within X days of written consent of the lending authority (i.e. the bank).

Some contracts may stipulate that the contractor may request evidence of the owner's title to land and capacity to pay the contract price plus any variations agreed to after the contract is



executed. And failing that, the contract may be entitled to suspend works under the contract.

Other contracts may require the contractor to give a written notice of commencement of the works within a set timeframe after commencement.

Cooling Off Periods

In certain jurisdictions, there may be legislated cooling off periods with respect to residential building contracts. A cooling off period allows the developer to rescind the contract even if work has already commenced. It is typically 5 business days and starts from when the developer receives a signed contract (including any plans and specifications).

A cooling off provision should contain the procedure that the developer must follow to exercise their right to rescind. Usually, this will involve a written notice delivered to the contractor.

When a contract is rescinded, it is expected that the contractor refunds the developer money paid by the developer – except for out of pocket costs reasonably incurred by the contractor prior to the rescission.

Different jurisdictions may contain exceptions of this right of cooling off. An example is where the developer received formal legal advice about the contractor prior to entering into it. If such a carve-out exists, the contractor may seek to protect its position by use of a clause stating that the developer warrants that they have sought out legal advice prior to entering into the contract.



Progress Payments

Virtually all construction contracts involve payment of the contractor by instalments. These instalments are paid at milestones. Given the nature of how construction costs are incurred, the allocated amounts of these progress payments are not linear but resemble an S-curve.

Well-drafted contracts should have progress payment schedules particularising the items claimed and their corresponding amounts. Of course, these schedules are subject to variations which should be dealt with separately in the contract.

With respect to a construction contract, the progress payment clause details, in writing, the contractor's right to receive and the developer's obligation to pay.

Progress payments can sometimes be regulated by legislation which prescribes requirements including (but not limited to):

- Caps on the percentages of the contract price that the contractor can claim for each stage of construction.
- Procedures and timeframes to which a contractor can make claims for such payments.
- Remedies and dispute resolution mechanics available to the contractor, such as adjudication, if the developer does not make a payment.

In fact, some contracts go as far as having straightforward provisions which set out the contractor's right to receive payments and merely point towards the relevant legislation without adding much further detail. A legal review can determine whether the contract is compliant with such legislation and for the developer's understanding of the legislations' ramifications.



Typically, in practice:

- the contractor notifies the developer and the quantity surveyor of the claim;
- the quantity surveyor then assesses the claim to determine whether the work is completed to ensure that the claim is substantiated;
- if the quantity surveyor is satisfied, he or she will sign off on the claim; and
- The signed-off claim is sent to the developer's financier and the claim is paid directly to them.

Quantity surveyors should liaise with the builder to conduct the assessment. During the assessment they will have regard to the materials and labour used.

Suffice to say, the absolute amounts and the timing of the progress payments should be consistent with the intended completion of the work and what has been approved by the lender.

One requirement that lenders typically impose are retention (fixed percentages of the progress claims) which are deducted from the progress claim.

Interest On Payments

Some construction contracts allow the contractor to claim interest on overdue payments. Such provisions may refer to a fixed rate, a schedule of rates, or to some external benchmark like a central bank rate.



Conceptually, this is distinct and separate from a liquidated damages clause. However, a legal review is recommended to determine whether these clauses interact in unexpected ways.

Extensions Of Time

Given the number of moving parts involved in even simple construction projects, there are many ways that a project could be delayed. Although the contractor should factor in the possibility of delay into the contract price and time for completion, resolution of such delays are not always quick. As such, a construction contract should contain a robust extension of time provision.

Here is a list of common causes of delays that extension of time provisions should cover:

- Inclement weather and resulting conditions
- Court or tribunal orders for work to be suspended which are not the contractor's fault
- Industrial disputes which are not specific to the site
- Unavailability of materials which is not the contractor's fault
- A variation of the work
- The contractor suspended work due to the developer's fault (e.g. failure to pay, refusal of access to the site, etc).
 Reference should be made to suspension provisions in the contract.

The intent is that the contractor is protected with regards to events that are not reasonably foreseeable and beyond the reasonable control of the contractor.



That said, it is helpful for a contract to stipulate that the contractor needs to take steps to reduce the duration of any delay.

Extension of time provisions typically set out the procedures which the contractor is required to execute in applying for the extension. These requirements invariably involve written notices to be delivered within a stipulated timeframe and a reference to the contract's dispute resolution clause where the parties are unable to come to an agreement.

Prime Costs

Prime cost (PC) refers to an allowance for specific work or materials provided by a subcontractor for completion of the project. A good example is door handles. If the developer has not specified a particular brand or model of handle, the builder will allocate a cost to them rather than specify the cost which could wildly vary (e.g. plain aluminium doorknobs versus gold plated ornamental doorknobs).

Contractors must reasonably estimate the cost of PC items and provide (via a schedule in the contract) details about cost, quantity and profit margin. If the contractor's actual costs end up higher, the contract sum is increased, and if the main contractor's actual cost is lower, the contract sum is reduced.

Furthermore, from an administrative standpoint, prime costs are incurred as progress. This means that it is easier for a contractor to claim such costs in contrast with a variation – which can be more onerous for the builder to justify.

The most appropriate way to reduce the chances of a prime cost blowout is to be as specific as possible with what is to be



included (e.g. brand, colours, design, etc) and to assign reasonable values to those items.

Provisional Sums

On the other hand, a provisional sum (PS) is an amount of money included in the contract sum to cover work and/or materials (or part thereof) that, by nature, cannot be priced accurately. Typical examples include sitework costs. For example, if a site contains previously undiscovered large underground rocks and tree trunks, clearing them may cost thousands of dollars more than the original estimated excavation costs. Provisional sums also include the builder's margin.

Provisional sums are recorded as a separate schedule in a similar manner to prime costs.

Similar to PCs, if the contractor's actual costs end up higher, the contract sum is increased and vice-versa. Although the builder is legally obliged to take reasonable steps to make accurate estimates, unforeseen events may mean exceeding that sum – sometimes substantially.

In light of how prime costs and provisional sums can potentially blow out, developers are advised to incorporate buffers into feasibility calculations. It is also prudent to discuss in detail with the builder, the risks and consequences and potential risk mitigation measures.



Variations

Given that construction projects never go 100% to plan, all contracts should contain unambiguous provisions regarding variations.

Aside from the developer and the builder having the right to vary the work, the contract should usually stipulate that the contractor must provide to the developer a written notice containing:

- A clear description of the variation (the work required to be undertaken).
- The date of the request for the variation.
- A reasonable estimate of timeframes (especially if the variation causes a delay to the completion of the works as a whole).
- The change in contract price as a result of the variation or the method of calculating that change.
- If there is an increase, when the increase needs to be paid and, if there is a decrease, how this decrease is to be accounted for. Usually, unless agreed between the parties, adjustments in the contract price occur at the time of the next progress payment.
- Procedural requirements in relation to the notice (e.g. the notice must be signed and dated by both parties to constitute acceptance).

A variation clause should also give the owner a right to terminate the contract if the owner is unable to meet the cost of



the variation and the variation occurs as a result of one of the following:

- A matter which could not have reasonably been expected to be needed by either party for the work to be completed.
- A requirement of an approving authority (e.g. council) or a statutory authority (e.g. a water authority) which was not known when the contract was entered into.

A well-drafted variation clause should state that the developer is not liable for any variations that are due to the fault of the contractor.

Variations are a common cause of disputes between the developer and the contractor. As such, a variation clause should refer parties to the dispute resolution procedures under the contract. Dispute resolution provisions are discussed below.

Variation clauses may be influenced by legislation and case law depending on the jurisdiction. Legal advice is helpful in understanding such influences.

Permits And Approvals

The default position is that the contractor bears the cost of obtaining all necessary application fees for building and occupancy approvals. These costs are usually included in the contract price. However, it is possible to contract out of that.

This provision usually gives the contractor the right to terminate the contract if permits are not obtained within a suitable time frame along with the procedures for doing so.



Access To Site

This provision allows the contractor (and subcontractors) access to the development site to complete the work required. This clause should also oblige the contractor to allow the developer and their representatives to access the site for inspection purposes.

There may be other provisions which hold the builder responsible for bearing the costs of delivering materials to the site and for any damage caused to the site itself.

Insurances

There should be provisions that set out the types of insurances that the contractor requires as a condition of carrying out the project alongside other obligations.

Contractors are generally obliged to maintain the following types of insurance until completion of the work:

- Public liability insurance: to cover claims made by third parties resulting from death, personal injury, or damage to their property.
- Property damage insurance: for work done on the premises including work in progress, temporary work for a variety of reasons such as accident, theft, fire, weather, vandalism, etc.
- Employers' liability and workers' compensation insurance: against claims by employees or contractors resulting from death or personal injury caused by the project.



 Builders warranty insurance: to cover for a contractor's failure to commence or complete work and defects as a result of the contractor's death, insolvency or disappearance or if the contractor's licence is suspended as a result of a regulator's order.

Such a provision also typically obliges the contractor to provide details in relation to their insurance cover upon request such as policies and certificates. If they fail to do so, the developer may take out the insurance themselves and deduct the premiums from the contract price.

Indemnities

To further incentive the contractor to take out the necessary insurances, contracts will generally contain a clause where the contractor agrees to indemnify the developer against any liability or loss in respect to death, personal injury, or property damage with respect to the project. That said, for fairness, the contract will also state that the amount of the indemnity is reduced by the extent to which the developer or a third party is responsible.

Indemnity clauses are effective in protecting the developer's interests in that, if something went wrong, the developer would have to prove that it was the contractor's fault. However, under an indemnity clause, the indemnifying party (i.e. the contractor) must pay for the loss or damage regardless of whether it was the contractor's fault.

That said, for fairness, the indemnity provision will contain exclusions. Otherwise, no contractor would ever agree to enter into one. A typical exclusion is that the amount of the indemnity



is reduced by the extent to which the developer or a third party is responsible.

Completion

Typically, completion (also known in some contracts as practical completion) is the time where the contractor declares that it has:

- completed the works as set out in the contract including the plans and specifications as set out in the contract;
- repaired damage caused to other property and the site generally as a result of the work; and
- removed all the rubbish and surplus materials from the site.

Usually what will happen is that the contractor will send out a notice to the developer regarding completion. The developer will then have a certain timeframe (e.g. 10 days) to respond and, if dissatisfied, follow a procedure as set out in the completion clause of the contract.

The contract should refer to the dispute resolution clause if the parties cannot agree upon completion within the timeframe set out in the completion clause.

Final Payment

A construction contract should ideally contain a clause governing the conditions under which the builder can claim the final payment of the contract from the developer. Generally,



builders should only be entitled to make such a claim when the works are complete (as defined by the contract), the necessary occupancy certificates are issued, and keys are handed over.

Such a clause will also set out the timeframe within which the developer must pay the builder upon the builder becoming entitled.

Defects Liability Period And Retentions

A well-drafted construction contract should have a defects liability period. A defects liability period is a period of time after completion in which the contractor must rectify defects which have become apparent to the owner. This period typically ranges from 3 to 12 months.

Generally speaking, the procedure is that, if a defect is found, the developer must notify the contractor in writing (usually in a form set out in the contract). From there, the contractor has a certain period of time (e.g. 28 days) to rectify the defect.

Some contracts allow for works that rectify a major defect to have its own defects liability period. For example, if there is a major defect with the roof of a dwelling which is detected 2 months into a 6 month defects liability period which is rectified. The rectification works themselves may have a 6 month defects liability period such that the developer can call upon the contractor to rectify the defect up to 8 months from completion if the contractor did not rectify it properly at first instance.

The defects liability period is distinct from any statutory builders' warranty period although both of these regimes have the intent



of incentivising the builder to competently perform its contractual obligations in a timely manner.

If there is a dispute between the developer and the contractor about rectification, the contract should ideally have an effective dispute resolution clause. Dispute resolution clauses are discussed below.

Retentions are fixed percentages of the contract price that are withheld from the contractor until the end of the defects liability period to ensure the contractor properly performs its contractual obligations. Although the contractor technically owns the funds, retentions are nonetheless a form of financial leverage.

Retention percentages typically range from 5% to 10%. Therefore, if there is a progress claim for \$500,000 with 10% retention, the contractor will receive \$450,000 (90% of \$500,000) with the remaining \$10,000 payable at the end of the defect liability period. Depending on the contract, if the contractor fails to rectify the defects in time, they may forfeit the retention.

Dispute Resolution

This clause will set out the procedure of how disputes between the parties are to be resolved. The intention is to resolve matters in a timely and constructive manner and avoid costly legal action. Construction disputes take place for numerous reasons including a breach of the contract or even through mere miscommunications.

Usually such clauses will compel the parties to attempt to resolve the dispute amongst themselves within a certain time. Failing that, it will refer the dispute to a third party and/or a



government body. The more complex the project, the more detailed this provision will typically be.

Dispute resolution clauses may also protect developers from harsh applications of legal rights that may be available to the contractor. For example, in certain jurisdictions, legislation in relation to progress payments may allow a contractor to claim unlimited amounts of interim payments for disputed variations if there is no dispute resolution clause. However, that legislation may impose limits on the amount claimed if there is a dispute resolution clause.

Despite the above, even if there is a dispute between the parties, such clauses will typically state that the parties' rights and responsibilities under the contract continue to apply.

Notices

Construction contracts will generally have a lot of clauses which triggers events in accordance with notices given by the parties. For example, a contractor can terminate the contract by giving a notice if the contractor isn't paid. A notice provision will give details as to how the notices are to be given (e.g. by hand or by registered post).

Assignment And Subcontracting

'Assignment' is a legal term which refers to a party transferring ('assigning') its rights and obligations under the contract to a third party. Typically, contracts will say that one party seeking to assign its rights or obligations will need the consent of the other



to do so and that such consents should not be unreasonably withheld.

However, the contract will usually allow for contractors to sub-contract any part (but not all) of the work without consent. However, where this happens, the contractor is still legally responsible and liable for the work.

Copyrights

Construction contracts will typically contain a copyright clause with respect to the drawings, plans, and specifications of the project.

Generally, the party supplying the plans and specifications for the project has agreed that they may be used for the project. That party will also indemnify the other party against liability as a result of any person claiming ownership or copyright over those plans and specifications.

Where a contractor prepares the documents, it is agreed most of the time that the contractor retains copyright. However, the owner should be entitled to have the works completed by the contractor in accordance with those plans. That said, if the contractor has, in fact, breached copyright, one should refer to the indemnity clause discussed above.

Suspension

Most construction contracts contain one or more provisions that allow a contractor to suspend work upon certain events. These events are typically breaches of contract obligations by the



developer. Such events include (but are not limited to) failures by the developer to:

- Provide satisfactory evidence of title to the land.
- Demonstrate pay the contract price, including any variations.
- Pay progress payments (but usually this ground will require a contractor to notify the contractor in writing of such a failure and provide a window for payment).
- Advise the contractor promptly of any requirement from a statutory authority or lender that affects the work.
- Perform any work or supply materials required for the project which has the result of preventing the contract from continuing work.
- Provide access to the contractor, the contractor's employees, and subcontractors to carry out the work.

The contractor may also suspend the works if the developer goes bankrupt, enters into receivership, or liquidates. Bankruptcy, receivership, and liquidation usually result in termination of the contract.

If the developer rectifies the situation, the contractor is usually obliged to recommence work within a certain contractual timeframe.

Suspension of works may also trigger liquidated damages provisions within the contract if any exist. Liquidated damages provisions are discussed below.



Liquidated Damages

Some, but not all, construction contracts may contain a liquidated damages clause. This clause sets out the amounts one party must pay the other for various breaches of the contract. The provision should unambiguously set out the calculation method. It is intended to be the parties' best estimate of the damage that results from a breach.

Liquidated damages encourage parties to comply with the contract because neither party will need to go through a long-winded exercise of proving the extent of their losses. Furthermore, there is more certainty as to the amount payable.

Legal advice should be obtained as to whether a liquidated damages clause is enforceable. For instance, they may be unenforceable if the amount claimed would be extravagant or does not reflect the damage that the aggrieved party would suffer.

If calculating liquidated damages involves a time component, it is important to take in account valid extensions of time.

Termination

Construction contracts should contain various provisions in relation to termination. Ideally, the provisions regarding termination by the developer are separated from the provisions regarding termination by the contractor.

Typically, developers can terminate the contract if the contractor:



- Is unable or unwilling to complete the work or abandons the work.
- Suspends work before completion without a reasonable cause.
- Becomes bankrupt or goes into liquidation or receivership.
- Fails to proceed diligently with the work.
- Fails to remedy defective work.
- Fails to comply with authorities with respect to incomplete or defective work which would materially affect the quality or the progress of the work.

On the other hand, contractors can typically terminate the contract if the developer:

- Fails to provide satisfactory evidence of title to the land.
- Fails to prove capacity to pay the contract price and any variations.
- Fails to pay a progress payment or any other payment due under the contract.
- Becomes bankrupt or goes into liquidation or receivership.
- Denies access to the site to the contractors (and employees and subcontractors) to prevent the work from occurring.
- Otherwise obstructs the contractor from doing the work.
- Fails to perform work or supply materials to the extent that such a failure prevents the contract from performing or continuing the work.

The grounds upon which a contractor can terminate the contract overlap with the grounds for suspension of works. Therefore, it is a question of degree or severity which colours a contractor decision to either suspend or terminate.



These lists are not exclusive and contracts may contain an umbrella clause which allows either party to terminate as a result of a 'substantial breach' of the contract. Legal advice should be sought as always.

Termination of the contract by either party typically involves some form of written notice which ideally should in a form stipulated by the contract.

Other reasons for termination may be scattered throughout the contract. These would include the developer invoking the cooling off period, failure by either party to obtain the necessary approvals to allow work to commence and the developer being unable to meet the cost of variations.

Construction Process

The construction process itself is typically divided into five (5) distinct stages:

- Base
- Frame
- Lockup
- Fixing
- Completion

Although there is some variation as to how the construction process is broken down, what a developer should concentrate on is how the lender breaks it down. Typically, loan contracts will allocate funding according to stage. Those identified stages are the ones that the developers should take note of. Relevant building and construction law may prescribe the stages. Where a project is subject to that legislation, any other considerations



or debate are irrelevant as contracts should be consistent with legally mandated stages.

For typical projects where delays are minimal, construction typically takes 6 to 12 months. However, as with many other timeframes, the estimated timeframe is project-specific and actual time frames can vary depending on what occurs during construction.

Please note that this description of the construction process is not intended to be exhaustive. Rather, the purpose of this guide is for developers to gain enough knowledge of the construction process to be able to ask the right questions at each stage to keep the builder accountable. For example, after the foundations are laid, a developer should ask whether adequate drainage measures have been implemented.

The builder should be best qualified to answer any technical enquiries a developer may have. However, it may be useful to engage other experts to provide second opinions where necessary.

To mitigate the risk of expensive cost blow outs at the construction phase, it is vital for developers to engage a qualified and competent building inspector. Inspections should be conducted regularly at the end of each stage, and/or at regular time intervals.

Base Stage

The base stage involves preparing the site for construction, laying the foundations, and certain post-foundation activities required to maintain the integrity of the foundations and the site generally. Prior to laying the slab, the builder will engage in the:



- Removal of trees, vegetation, and unwanted structures
- Cleaning of rubbish
- Excavation and ground levelling
- Installation of supporting structures to the slab (e.g. concrete piers, screw piles)
- Laying of pipework for water and sewerage
- Preparation of an under-layer for the slab (usually gravel, sand, or a steel mesh)

Once the ground is prepared for the slab, the slab is poured. It will take about a week to dry out.

Upon the slab drying, further steps are required prior to the frame stage to ensure safety and stability and full function of the building. These include:

- Drilling of holes in the slab for drainage and sewerage pipes.
- Construction of slab footings and retaining walls where required.
- Waterproofing membranes to prevent water damage
- Chemical barriers to prevent termite damage

Proper drainage of the site throughout the construction process is also important because discharging any pollutants into a stormwater system, that is, anything other than rainwater is illegal. Therefore, having an appropriate drainage plan which prevents this from happening is essential.



Frame

To use an analogy, the frame stage is when the building's skeleton is constructed. Important milestones include the installation of:

- External and internal support structures
- External and internal walls
- Utilities such as electricity, gas, and plumbing
- Roof frame and sheeting
- Gutters
- Insulation

The amount of time the frame stage can vary depending upon the size and complexity of the building, the materials, degree of preassembly, number of personnel, and the weather. The weather becomes less of an issue when the roof is laid.

Lockup

The lockup stage, in ordinary terms, involves sealing the building from external intruders. Tasks performed include construction or installation of:

- Construction of external walls and cladding
- Attaching of doors, windows, flyscreens, and skylights
- Laying of gutters
- Installation of supporting elements for the roof such as fascia and soffit boards
- All the ceramic wall and floor tiles are installed to wet areas
- Painting of ceilings and internal walls



If the building requires expensive doors, the lockup stage usually involves installing of cheaper temporary doors where the final doors are installed when close to completion.

'Wet areas' are rooms or spaces where water is typically expected to flow. These include toilets, laundries, kitchens and garages.

Fixing

The fixing stage is where key internal features are installed that would be regarded as 'making a house a home'.

Tasks completed include:

- Installation of insulation of the walls and roofs.
- Installation of plumbing and electrical fixtures and fittings such as pipes, wiring, sinks, taps, bathtubs, showers, power points, etc.
- Construction of architraves, stairs, cornices, and skirting.
- Installation of plasterboards and internal cladding.
- Initial carpentry work including cupboards, vanities, window sills, etc.
- Waterproofing of wet areas prior to tiling.
- Tiling work for both the floors and the walls.
- Setting up of air conditioning and heating systems.
- Building of carports.

Drawers and counter tops are usually installed at the completion stage unless there is a specific request to do so in the fixing stage.



Completion

This is the final stage of construction where all painting, installations and detailing are to be completed.

Key milestones to be aware of in the completion stage include:

- Plumbing works: This includes installation of taps, mixers, shower fittings, shower screens and toilets.
- External and internal painting: This may involve a staggered approach. For instance the walls and ceiling may be done before installing electrical fittings whereas doors are done afterwards.
- Electrical fittings: This also includes telephone lines.
- Carpentry: It is expected that internal doors, cabinet doors, and drawers are completed.
- Internal flooring: The carpets and/or floorboards should be completed.
- Appliances: Ovens, hot water tanks, and hobs are installed.

Upon completion, the site will be cleaned up. A final inspection will be conducted by a certifier and, if successful, the building will be certified as complete and ready to occupy.