



# 7 constructiontips

essential construction lessons

7 construction lessons from  
industry professionals to help  
you accelerate your career, and  
deliver project success

# 7 Construction Tips

*7 Construction Lessons to Accelerate Your Construction Career  
and Improve Business Growth*

CNSTRCTR

TORONTO



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## Introduction

Over the last year or two I've been working on the website <https://www.cnstrctr.com>, during my time writing for this website I've come to realize that construction is an industry that doesn't share knowledge often enough.

We all work in our confined "company" silos and rarely is there collaboration between project teams and companies. What this means is that the industry as a whole suffers and generally falls further behind in all sorts of ways compared to other industries.

I've spoke with alot of people in my career and one of the biggest things that I've learned is that most of us are in this because we enjoy creating. We enjoy building something tangible. Myself – the most rewarding part of our industry is seeing something come to life and watch people using a building that you've had a hand in.

This book is intended to assist you in developing your skills as a project manager, superintendent, engineer or architect. It will help you to understand project processes, onsite activities and help you to build your next construction empire.

Thank you for downloading this book and I really hope you enjoy!

– cnstrctr

PART I  
PRE-CONSTRUCTION - STARTING YOUR PROJECT

Starting a construction project can be a daunting ordeal. There's a lot to consider and sometimes very little time to do it. The key thing to remember when spending starting up your project is to prioritize based on importance. Today we'll be walking through some of the key things to consider when starting up your construction project.

## STEP ONE – UNDERSTAND YOUR PROJECT AND GET YOUR CONTRACT IN LINE

Before starting any project you should understand what you are building. Spend time with the drawings (even if it means a few extra hours after 5pm) and read the specification through and through. Highlighting drawings sometimes helps to define scope (more on that later).

Once you have a firm handle on the scope, make sure you have your contract execution under way with your owner or partner. Unless you are the owner, under no circumstance should you start a project without some form of agreement or contract in place.



## STEP TWO – VERIFY YOUR CONTRACT AMOUNT AND BUDGET AND TRADE SCOPES

Understanding the project budget is equally as important as the scope. If you already have the budget set (by your estimating department) you'll need to play some catchup, otherwise you may need to tender out the various scopes of work to different trades.

Finalizing the trade scopes of work and contracts will involve finalizing pricing (through quotations or formal subtrade tendering). Verifying what is in each scope of work and making allowances to cover off any risks or scope gaps is important. Try not to rush this stage as a proper project buy in can save you a lot of time and money in the long run.



## STEP THREE – SAFETY

Getting your safety plan in line early will help you to start the project off right. The project safety plan should cover all of the different legal and regional HSE requirements that will be outlined by different safety associations. You can normally find this on one of their websites.

- OSHA
- IHSA

Make sure you take out your notice of project (or whatever the equivalent is in your area), complete your safety plan, assess and measure the safety risks and implement appropriate safety plans, take out insurance and any other certifications you need, understand your emergency response plan, and put all workers through proper safety training.

## STEP FOUR – PROJECT EXECUTION AND PROJECT CONSTRUCTION PLANS

The project execution and construction plans are really just documents which outline the different processes you'll be following on the project. Below is a list of subjects that should be included within the two documents

- Team Summary and Organizational Chart
- Submittal and RFI management and procedures
- Change management and procedures
- Schedule management and procedures for updating and notification requirements
- Billing management and procedures
- Materials handling plan (how will major and minor deliveries be handled and what are the details behind each)
- Vertical access plan (how is material getting to and from the various elevations)
- Major work plans (ie crane lifts and high risk activities)
- Quality Control Plan
- Risk management plan
- Human Resources and Training Requirements

The project execution and construction plans are really just documents which outline the different processes you'll be following on the project.

## STEP FIVE – VERIFY YOUR SCHEDULE

By this time you've already put together your schedule and understand the work break down structure. Now you need to verify it with your awarded trades. Consider implementing pull planning or regular scheduling exercises with your foremen. Have regular meetings to check status and verify that the durations you have in your schedule are correct.



## STEP SIX – GET COPIES OF YOUR CONSTRUCTION PERMIT

Unless you want to end up in a situation where your construction project comes to a halt when the building inspector shows up make sure you have taken out all of the appropriate permits. For your building permit, make sure you're aware who is responsible for it, on some projects the architect is, on some the owner, and on some projects the general contractor is responsible. No matter who is ultimately responsible no work should start until the appropriate permit is in hand.

In addition to the main permit there are many other small permits that you may need to get, permits such as an HVAC permit, Electrical Permit, Lane Closures, Elevator Permit, and the list goes on and on. Before starting activities research it to understand what permits apply to your work.

## STEP SEVEN – START THE WORK

The fear of starting or not knowing sometimes causes people to hesitate in pulling the trigger on a project. Nothing can delay a project more than a slow start so make sure you show urgency and push the schedule and project from the beginning. No matter how well you plan a project, problems will arise. By starting a project you're forcing those problems to come out sooner rather than later.

Nothing can delay a project more than a slow start so make sure you show urgency and push the schedule and project from the beginning.

Starting a project can be a daunting task but by following our steps above you should be prepared and working on your project in no time. Have you started up a project recently? What were some of the lessons learned that you had?



# Managing Construction Submittals

Submittals are like the starting blocks on a construction project. If you have a solid start the rest of the project will be easier to win. If you have a slow start or stumble on the submittals then you'll spend the rest of the project catching up.

Managing the submittal process is fairly straight forward but to do so you need an understanding of some basic concepts, work flows and to help you along the way, technology.

## CONSTRUCTION SUBMITTAL CONCEPTS

**Cut Sheet** – A set of data or information on a product or material that is pre-manufactured. For example you get cut sheets of washroom accessories, light fixtures, caulking and drywall components.

**Shop Drawing** – something that is custom built or altered to suit site conditions. Shop drawings will include plans, elevations, sections etc of each component to be installed. Shop drawings are typically provided for structural steel, rebar, misc metals, tile layouts etc. The intention of shop drawings is to provide site specific installation instructions.

**Samples** – samples are basically what they say they are. Samples are small pieces or full size pieces of products which represent the final product to be installed. Some products such as tile may require that a range of samples be submitted. This way you the architect will get a better understanding of the range of acceptable inflection in a product.

**Mockups** – where multiple materials come together the consultant or owner may request a mockup. Mockups are great way to control quality as a lot of the interfaces can be figured out in advance. Basically a mockup is a large section of a specific material or set of construction materials installed to look like the final product.

## CONSTRUCTION SUBMITTAL WORKFLOW

Your contract type will change what your submittal workflow will look like, however, in general they will always look the same.

**Step 1** – Subcontractor Receives Submittal from Supplier or Engineers Submittals Themselves.

**Step 2** – Subcontractor Submits Submittal to General Contractor.

**Step 3** – General Contractor Reviews Submittal – if it conforms to the specification continue on to step 4 – if not the general contractor marks up the submittal with comments and sends it back to the subcontractor as revise and resubmit.

**Step 4** – General Contractor sends Submittal to the Consultants (Prime Consultant if under a typical contract type).

**Step 5** – Each of the applicable consultants reviews the submittals and marks it with one of the following status:

- Reviewed – no comments
- Reviewed as Noted – minor comments not requiring a resubmission
- Revise and Resubmit – major comments or revisions, resubmission is required

**Step 6** – Consultants return submittal once it's all been reviewed to the general contractor.

**Step 7** – General contractor sends back to the subcontractor.

**Step 8** – if the submittal requires resubmission the subcontractor revises and resubmits back to the general contractor (start again at step 3) if not the subcontractor files and orders materials based on the submittal.

As we mentioned at the start of this section the workflow for construction submittals will change based on your contract type. As a recommendation meet with your consultants at the start of the project and establish the routing for each submittal so everyone is on the same page.

We won't go into great detail over what to look for in your submittal

reviews but there is a lot of great information over at this article on what consultants should look for in construction submittal reviews.





## STREAMLINING THE CONSTRUCTION SUBMITTAL PROCESS WITH TECHNOLOGY

There are plenty of different online solutions to help you improve the construction submittal process. Rather than write out the pros and cons of each (check out our technology in construction article for more information) we're going to focus on ways this can help.

**Digital Distribution** – rather than emailing submittals back and forth to one another and revisions potentially getting lost a central depository can help to keep track of all the files. Some software platforms will even email out notifications and allow you to assign submittals to individuals so they know when they need to review a document.

**Tracking** – as mentioned above – submittals can get lost. Easily. Using technology helps to avoid that and put ownership on individuals. Online or digital platforms can let you print reports which indicate which are outstanding and at different review stages.

**Collaboration** – one of the slowest processes for reviewing submittals is the fact that only one party can review at a time. By the time a submittal has made it through all of the various parties it could be one to two weeks later. Some platforms allow each party to review and markup the documents online.

Getting the construction submittal process right on a project can mean the success or failure of a project. Hopefully with some of the above tips and advice you can get it right on your next project.

### Online Construction Submittal Platforms

- Procore
- Plangrid
- Autodesk BIM 360
- eSub





## PART II

# PROCESSES AND PROCEDURES (EVERYONE'S FAVOURITE)

# Fundamentals Of Construction Scheduling

Scheduling, one of the cornerstones of a successful project and one that a lot of people shy away from. We've all been on that project where the schedule is behind, the schedule when presented is confusing or non-existent and it's your job to make the most sense of it.

When you google the term "schedule" a wide range of subjects comes up, from a detailed theory behind developing the proper break down structure to different concepts on lean planning and principles. Today we are going to explain to you some of the fundamentals of construction scheduling. As a sidenote - this article does expect that you know how to operate the scheduling software, for tutorials on scheduling software, unfortunately you'll need to google it.

To start let's explain some of the basic terminology:

## BASIC SCHEDULING CONCEPTS YOU NEED TO KNOW

**Gantt Chart** – you know those weird bar charts you always see someone bring out in a meeting? A gantt chart is just a fancy name for it. Ultimately a gantt chart is the default display for most schedules and scheduling software such as Microsoft Project or Primavera. A few basic notes: the gantt chart lists the project activities along the Y-Axis. Along the X-Axis is the project timeline (by day, month, quarter, year etc). The bars that are displayed represent the duration of a given activity.

**Work Break Down Structure (WBS)** – think of the work break down structure as your categories within your schedule. They are buckets where you can enter categories and allow you to display your information in a more organized fashion. A good example of a work break down structure category might be “Substructure” or “Superstructure”

**Activities** – Activities are the bread and butter of your schedule, each activity is listed along the Y Axis of the schedule and represents an item of work on your project. Activities have durations (which we will get into) and fit within a category or work break down. A good example of a category might be “Place Concrete – Level 03”.

**Durations** – durations are the length of time that a particular activity will take and thus the length of the bar in the gantt chart. Activities are typically set up to be “days” in duration but more complex scheduling softwares can get down into the hours and minutes.

**Relationships** – relationships are really one of the most important part of a schedule. Activities and work breakdown structure without relationships are really just an organized list. Relationships define what activities are before and after an activity and are typically represented on a schedule with black arrows. There are different types of activities but the most common and widely used is finish to start. A good example of how an activity should affect your schedule, a finish to start activity would be applied to the drywall as it relates to

the painting activity, meaning the painting work would only start after the drywall work was done.

There are plenty of other things to know but understanding the above terms and what they look like on a schedule will give you good footing for the next steps that we'll explain.





## BASIC STEPS TO PROPERLY SETTING UP YOUR SCHEDULE

In this section we'll walk you through the right way to set up your first schedule. When people start scheduling I see a lot of people get over eager and start listing activities right away. Before you do that, stop and read the below:

### **Step 1 – Think it Through**

As we mentioned above – a lot of people jump into things quickly and start listing your activities without really planning the project. Before you start spend time with your drawings, spend time with the specification and your client to understand their needs. Some questions you should be asking yourself are:

- Does my project need to be completed in phases (ie does it start all at once or can I only do part of the project)
- What are my site restrictions?
- Do things need to remain until other activities are completed?
- Are there any critical milestones or turnovers that need to be met? Are there any restrictions preventing you from starting (ie is there a tenant in the building now?)
- What are the major scopes of work?

### **Step 2 – Set Up Your Work Break Down Structure**

Earlier in the article we explained what a work breakdown structure is but didn't go into much detail. We mentioned you should think of your WBS as the categories or buckets activities will fall into. Essentially they are the major scopes of work your activities will fall into. These should be set up at the start of the project and planned out in advance. Work break down should be set up so it's broken up into major groups followed by a more refined breakdown. A good example of this is as follows:

- Milestones



- Preconstruction
  - Design
  - Permits
  - Procurement
    - Tendering
    - Contracts
    - Submittals
  
- Construction
  - Demolition
  - Substructure
  - Superstructure
  - Building Envelope
  - Finishes
  - Mechanical
  - Electrical
  
- Deficiencies and Closeout

The above is a basic work break down structure but should help you to understand the concept behind it. There are lots of different ways to break down a project but ultimately it will be tailored to your project. Remember, start big and work down to small. Activities should be utilized for the actual work itself.

### **Step 3 – List Your Activities**

Another huge mistake I see a lot of new people make is to list activities out, build relationships and set durations right away. To simplify your life begin by listing out all of your activities within each work break down division for the entire project. DO NOT set the durations or the relationships yet. Once complete sleep on it, and re-review. Make sure everything has been listed, the reason for taking this approach is that once you start adding relationships adding

activities in between becomes much more difficult and takes much longer.

When naming your activities make sure to keep the naming convention consistent, for example, don't add the level at the end and at the start, keep formatting and wording the same. Another good suggestion if your building has multiple areas is to list the area or phase within the name itself. This way if you have two drywall items you can distinguish between them. A good example of some activity names includes:

- PHSA\_LVL01\_Concrete
- PHSB\_LVL03\_Concrete
- Area2\_UL\_Drywall Ceilings
- Area2\_LL\_Drywall Ceilings

As you can see the labelling is consistent throughout. This helps in reading the shedule later on and makes it look more professional.

#### **Step 4 – Build Your Relationships**

Okay the moment you've been waiting for, where your schedule actually starts to spit out real information. Building the relationships requires a basic level of construction knowledge, understanding what relies on which activities to complete. This is a skill that is developed over years and each person may have different ideas. To build your relationships between activities consider bringing in others to assist you in developing the logic.

To build a relationship the actual method varies from software from software but in essence you need to determine what goes first and link the two activities. There are many different relationship types, below is a summary for you:

- Finish to Start [FS] – the most common type of relationship means that one activity must finish before the next is started
- Finish to Finish [FF] – means that the finish of one activity must occur at the same time as another activity.

- Start to Start [SF] – this relationship means that both activities start at the same time as one another. An example of this might be two of the same type of activity in different areas or if for example mechanical and electrical rough in can commence at the same time.

Once you have all of your relationships in hit schedule and watch your document come to life!

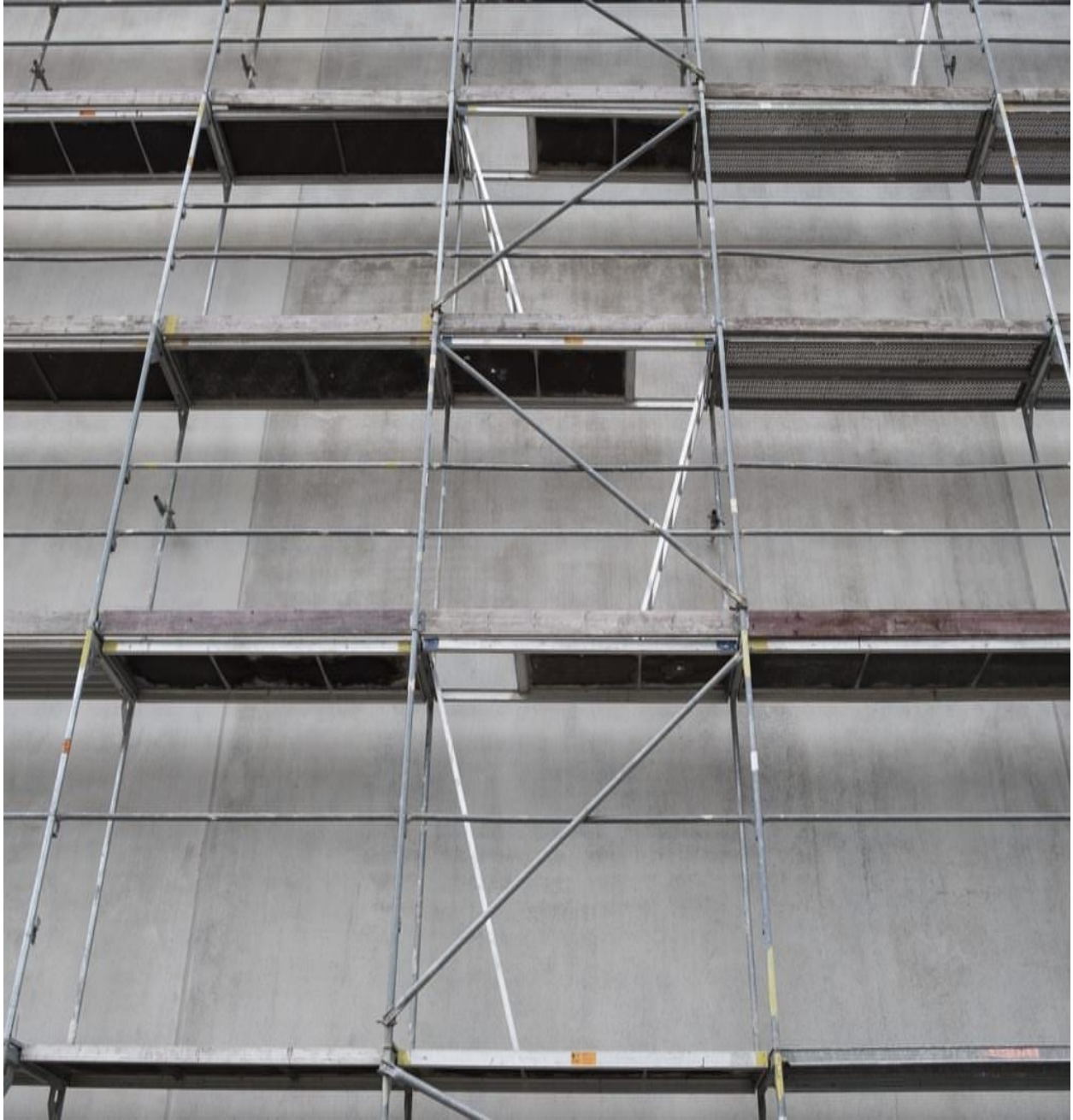
### **Step 5 – Enter Your Activity Durations**

The next step in the process is to enter your durations, this is another task that you may not be best suited to do if you're just starting in the industry. Often it takes many years of experience to understand productivities. There are plenty of great resources for construction productivities but below I've included links to just a few:

Activity durations should be based in reality. For example if you have a duration that says five days make sure there is a reason you have five days in the schedule. A schedule is only as good as the information that goes into it, so having inaccurate information feeding the schedule can lead to an inaccurate schedule and ultimately project problems.

### **Step 6 – Peer Review**

The last step I'm going to make a recommendation on today is doing a peer review of your schedule. For the most part if you've followed the steps above you've created this mostly in isolation. That isn't good. Bring in your peers, trades, consultants and even the owner to review your schedule and provide honest feedback. If something is out of sequence make sure they tell you, same with durations. It's important to not just get other people's opinions but their knowledge and take on things. They may have a way to build something faster by re-sequencing activities.



## FURTHER READING

I've only touched on the basics of scheduling in the above but there are lots of other important things you need to understand before you can consider yourself an expert. I've included a few links below for your further reading. Special thanks to all of the people that provided the content in the below links.

- [Work Break Down Structure Explained in Detail](#)
- [Critical Path Method Scheduling](#)
- [Terminology Glossary - cnstrctr](#)
- [Pull Planning and the Last Planner System](#)

# Construction Project Closeout - Everyone's Favourite Part Of The Project

We've all been there, stuck on that job that everyone has left, construction project closeout is not fun, but it's a necessary evil of every project. Depending on what type of project you are on, project closeout will look different, but depending overall there should be three main areas you need to be focusing on:

- Turnover and Permit Closeout
- Quality and Issue Closeout
- Financial Closeout
- Warranty Period

Focusing on these areas won't necessarily guarantee a successful closeout but will put you on the right track.

## CONSTRUCTION TURNOVER AND PERMIT CLOSEOUT

Construction Turnover, Occupancy, Substantial Performance (in case you're not sure what each of these are we've added them to the glossary). Project turnover and can be a confusing process but there are a few main procedures to follow.

Project occupancy means that people can begin using the building. In order to get occupancy you need a number of documents from your consultants and various agencies but ultimately it's the building inspector who grants occupancy. Some of the documents they will be looking for include:

- Letters from each of the consultants confirming that the project is built to drawings and specs
- Letters from fire alarm vendor
- Letters from Electrical Safety Association in your area
- Documentation on flame spread rating and firestopping / fireproofing material
- Signoff from third party inspectors
- Sign off from elevator inspectors

There are many different documents which can affect occupancy – your best bet is to discuss these with your building inspector well in advance of the date of turnover.

## THE DAY OF CONSTRUCTION TURNOVER

On the day of turnover, ensure that all of your consultant walkthroughs have been completed, that your life safety systems are commissioned and all of your fire separations are completed. Exits need to be in conformance with the building code.

Construction turnover should never be a surprise, regular walks with your building inspector in advance of the date should set the expectation in advance for what the building will look like come the big day.



## POST CONSTRUCTION OCCUPANCY

Once you have occupancy, there will likely be a list of items the building inspector wanted complete or that were deficient. Getting these items completed so the building inspector can close your permit. Getting these items completed in a timely manner can help to avoid complications with operation of the building in the future.

To help manage these issues create a master list of all of your deficiencies, highlight these as a critical item and assign them to yourself.





## QUALITY AND ISSUE MANAGEMENT (CONSTRUCTION DEFICIENCIES)

A lot of owners have high quality expectations and as part of your business model you need to deliver. If the contract documents and your budget don't reflect the quality that you think your owner will be expecting you need to level with them up front and discuss with them the requirements to deliver that level of quality.

As you near the end of the project it's time to start implementing your deficiency process. Start this process several months in advance of the turnover date.

We've already written a really great article on quality and how to manage the deficiency process in construction so check it out [here](#).

The most important part about issue closeout is that you don't let things linger. The longer issues sit outstanding the harder they can be to resolve.

## FINANCIAL CONSTRUCTION CLOSEOUT

There's a part in every project manager's project where they start to get nervous about over running the budget. A lot of times that nervousness comes in the last few months of the project when they start reconciling all of the trade values.

Typically on projects I like to start this process a few months before turnover. There are a few good practices to start with:

- Send an email all trades requesting any outstanding quotations by a certain date. If they fail to submit them by that date indicate that they will not be accepted. This way you put the trades on notice to ensure all quotations are submitted.
- Request quote logs from each of the trades – this way you can be sure that the ones you have match their list and there are no surprises down the road on a quote you may have overlooked in your inbox.
- Review your change notice log for completeness. Ensure all quotations are submitted to the owner well in advance of the project completion date.

## SUBSTANTIAL PERFORMANCE ON CONSTRUCTION PROJECTS

There's a requirement in most contract types to apply for substantial performance. Essentially substantial performance is a mathematical calculation that if granted begins the 45 day holdback period. Check with your local construction association or architectural association for the guidelines in your area.

- The submission typically involves identifying a few items:
- Amount billed to date
- Value of work outstanding
- Value of deferred work (work that was delayed by the owner and agreed not to be included in the initial turnover date)
- Value of deficiencies

Assuming the amount of outstanding and deficient work falls within a value as dictated by the calculation you'll be granted substantial performance on your construction project. Once granted it's your responsibility to send it to your local construction association for publication. This will notify subcontractors on your project and begin the lein period.

A lein can be applied at any point on your project, however after the 45 day hold back period expires the project can no longer have one applied to it that would otherwise affect occupancy of the project.

## THE CONSTRUCTION WARRANTY PERIOD

You've turned over the building and achieved substantial performance but the job isn't over yet. Many contracts have a warranty period. One year is typical for the industry but your contract may stipulate longer periods. During this period you and your subcontracts are responsible for fixing defects that arise in the workmanship for the project.

It should be made clear to your owner that the warranties don't cover damage or improper use of equipment. In order to protect yourself we recommend issuing a letter to your owner and architect outlining the procedures for warranty claims and what is covered.

During this time it's important to keep a log of warranty issues. This was if the same issue reoccurs you can identify it more easily and keep track of problem trades.

People's time can be valuable and sometime this task get's assigned to people on new projects. If you are the owner of your business it may be worth hiring someone dedicated to resolving warranty issues on other projects.

## CONSTRUCTION CLOSEOUT DONE BETTER

Construction closeout will be the last experience your owner has of you, and doing it poorly can mean a loss in return business.

Spend the time to do construction closeout right, be diligent and follow up regularly on outstanding items. Doing these things will help to turnover and deliver a strong finished product.



## PART III

# ON THE JOBSITE

# How To Plan Your Next Construction Crane Lift

Many construction projects have a crane lift on them and planning them correctly is a difficult process. There can be many different reasons for needing a crane on site, from moving a big piece of equipment onto site, pouring concrete, or installing windows, cranes have many different applications.

In today's article we are going to walk through some of the basic requirements for a crane lift and things you should be looking for.

## WHAT YOU'LL NEED TO START PLANNING YOUR CRANE LIFTS

Getting the basic tools and parties together to start planning your first lift is important. Starting out organized will help you to be more organized as the job get's more complex.

### *People and Companies You'll Need*

- A crane company (with an engineer)
- A safety department
- City staff (permits for roads, sidewalks, airspace, etc)
- Superintendent and Project Manager for the project
- Subcontractors and suppliers
- Traffic control personnel (if necessary)

### *Some tools and equipment you'll need*

- A binder with tabs to organize all of the information you'll get
- A crane
- The equipment you'll be lifting
- Traffic control equipment (if necessary)
- The crane itself and any related equipment (jib, extended boom, hook, counter-weights)

### *Information You'll Need*

- The weights and sizes of equipment you're lifting
- A city services plan
- Structural drawings for the building and surrounding structures
- Geotechnical report
- Weather report (for the day or days of the lifts)

Once you have everything in hand above let's get started planning your lift.

## DETERMINING YOUR REQUIREMENTS FOR A CONSTRUCTION CRANE LIFT (S)

### *Weight and Size of the Items*

One of the first things you should do is establish what the crane will be for. What is the object you are lifting? Are there multiple's of this object and or multiple objects?

Once you've determined what you'll be lifting pull out the information on the products. Find the weight and dimensions of the object. A two tonne item that is the size of a person is a lot simpler to lift in some instances than a two tonne item the size of a school bus.

Determining the size and weight of the items you'll be lifting will help you to determine the capacity requirements of your crane but there's a third factor to consider. The location of the lift and final location of the product will also impact the size.

### *Location Matters*

Pull out the drawings and determine the start and end points for your product. Determine where the product will be delivered and where it will need to end up, if there are multiple locations, mark out them all out on a drawing. This needs to be done in both a horizontal and a vertical direction.

### *Frequency*

The frequency of your lift will impact the type of crane. Need regular lifting (day to day) but don't want to close a lane, you may need to put in a semi-permanent tower crane or derrick crane. Need one large lift – a mobile crane may be your best bet.

Just in case the above doesn't quite make sense, we've included a

chart below which indicates what each type of crane will be best used for to help in your decision making.

Crane Type	Space Requirements for Setup	Frequency of Lift (Days Between Lifts)	Capacity (Amount it can carry)	Mobility (Duration)
Borderson Crane	Low	Frequent	Low	H
Tower Crane – Standard	Medium	Frequent	Medium	L
Tower Crane – Luffer	Medium	Frequent	High	L
Derrick Crane	Low	Frequent	Low	Me
Mobile Crane	High	Low	High	Me
Crawler Crane	High	Low	High	Me

Once you've made a selection on the type of crane you plan on going with it's time to start finalizing the location of it.

There's a number of people you'll need to start consulting at this point but some basic advice will be to get an engineer involved. They will help you to determine the correct size for the crane and make recommendations on any special attachments that are required (more on this a little later).

Finalizing the location of your crane comes next. Some things to ask yourself are: what are the site restrictions? Do I have adjacent structures surrounding the lift point that could limit the swing radius? Is there existing structure that I could need to shore? Are there subsurface services or tunnels that would need to be protected or reinforced during the lift?

If the location has been settled, put together a high level drawing indicating the crane, swing radius and final locations of all of the pick and drop off points. Highlight any surrounding structures and underground services that the operator and team need to be aware of. Distribute this to the group including your engineer for review. The engineer will need to draw up a formal document, stamped with all of the loads and lifting weights noted.

Of special note – as loads get further away from the central hub of the crane the capacity decreases and therefore a larger crane may be required for smaller lifts that have to travel a long distance.



## PLANNING YOUR DAY (S) OF LIFTING

Remember that binder we mentioned earlier, open it up and begin preparing it. We recommend including the following items within the binder, a lot of these documents will need to be developed with your team and will help to keep your information organized:

**Executive Summary** – this is a high level summary of the lift for those interested in getting the coles notes. Include the purpose for the lift, location, time date and summary of the pick points and crane type and size.

**Contact List** – this is important, communication on the day or days of the lift is important and it's good to have everyone's contact information in one spot. This should include all points of contact for all companies involved in the lift.

**Engineered Crane Layout and Cutsheets** – include all information related to the crane layout and the cutsheets on the piece of equipment on the crane. This should include the final signed off drawing from the engineer we mentioned earlier.

**Permits** – there's a long list of permits you may need – this could include a permit for air rights, road close permit, even the building permit could be good to include in this section.

**Safety Tab 1** – Activity Specific Safety Plan – this is a critical piece of information, and should be developed with all those involved. Include a detail job hazard analysis. Each trade should have their own JHA

**Safety Tab 2** – Safety and Emergency Response Plan – Include the general safety plan for the contractors and an emergency response plan in case something is to go awry.

**Schedule** – develop a detailed schedule with your team. This schedule needs to include the time and duration of the lift setup. What time each of your loads will be delivered to site and the time required for each of them. A good practice for this is to also include the contact for each of the lifts so people know who to contact in the event something isn't going as planned.

**Insurances** – there's likely going to be some hefty insurances

provided from each of the vendors. Make sure it's provided by everyone and filed in the event it's required.

**Traffic Control Plan** – unless you're building in an open field there's a good chance your deliveries or lifting will impact traffic and or pedestrian flow. This should be included in the binder as well and should mark all controls clearly as well as include a description for any flagmen or police.

**Other Information** – we like to include a tab with other information or correspondence at the end of the binder. This section can include things such as delivery routes (if you have oversized loads coming to site), communication with your owner, and other pertinent information you feel you might need on the day of the actual lift.

## LET'S DO THIS – THE BIG DAY OF THE CONSTRUCTION CRANE LIFT

The big day or day's are here, and you're justifiably nervous (though if you have all of the above information in hand you're about as prepared as you can be). Start the day early (we mean 4AM early) and arrive first to site to give yourself some time to mentally prepare for the day.

Start the day off by bringing all parties into a meeting room and doing a huddle, go over who is responsible for what, what the schedule is and appoint a go / no go point of contact for the day and each of the deliveries.

Collect everyone's information including the crane drivers certifications and crane certifications. Make sure everyone fills out the site specific job hazard analysis and signs off on the safety plan.

one important thing to understand is that the crane operator ultimately has the last say on a crane lift. If they feel the least bit uncomfortable about a situation they can call off the lift. Respect their opinion. Becoming an operator takes lots of training and often times they know best.

Be mindful of your schedule throughout the day, if your permits have time limit watch them closely, make sure communication is open. Consider assigning a radio channel for the team so everyone know's what's going on.





## CELEBRATE OR RE-GROUP

The big day or days have come and gone and things either went well or haven't. Take time to celebrate your accomplishments as a team. It's important to reward people for their work. If things didn't go as planned, start by understanding what went wrong and plan your next day.

A successful crane lift can be a lot of work and you should always go into it prepared. Be kind to people around you and understanding of their requirements. This will be something you'll likely do a few times in your career so take time to reflect on your lessons learned both good and bad.

Think you have what it takes to plan a crane lift? Let us know if you've done one in the past and what you think about our guide in the comments!

## PART IV

# YOUR CONSTRUCTION CAREER AND BUSINESS



## Starting Your Career In Construction

If someone was to have asked me fifteen years ago what I would be doing I could not have guessed a career in construction. Building really cool structures is not something that everyone gets the opportunity to do in their life. When I graduated high school I didn't even know this opportunity existed for me, so today I thought I'd write an article about the different opportunities for people to get involved in this industry.

There are many approaches to getting involved in construction management or construction in general. It's one of the few industries where a PhD is not necessarily valued heavier than a college diploma and experience. Because so much of what we do is dependent upon knowledge typically that is valued more. So below I've compiled some tips or advice for someone looking to get into this field!

## START WITH SOME WORK EXPERIENCE

Seriously this is the best advice for any young person I see interested in the industry. Do some labour or surveying work prior to getting involved. Help your dad put a roof on, frame your basement, starting a painting business. The really cool thing about this is that it will teach you about different aspects about the industry while providing you with detailed knowledge about a trade.

For me, I worked in the as a surveyor for a summer job and after that I got a job in a machine shop fabricating car parts. At the time I thought the job was monotonous inspecting and grinding down welds, but now steel and layout are one of my stronger scopes of work and I can fully understand them when someone says the weld is poor.

The really cool thing about this is that it will teach you about different aspects about the industry while providing you with detailed knowledge about a trade.

## TAKE SOME SCHOOLING

Ultimately getting into the industry in Canada or the United States means taking some schooling. As I mentioned above, school in this industry is not given the same importance as it would be as a doctor or a business consultant. Many companies value experience and knowledge over schooling. Rightfully so, you can learn much more in an afternoon with a carpenter than you can in a semester of courses at University.

That all being said school is an important part of everyone's education and learning the fundamentals and some of the theoretical knowledge related to why we do things is important. In addition schooling can sometimes provide you with the contacts you need to land a job, which brings us to our next point...



## COOP OR APPRENTICESHIP

A coop placement or apprenticeship can be one of the most valuable experiences in a persons life. I was fortunate enough to get a placement at an incredible company which than opened up into a full-time position. Through the co-op I was able to meet people in different industries, and build relationships early on in my career. Some of my best contacts are people I met during this time in my life.

Ultimately if the full time job hadn't have been offered to me, I likely could have moved on and been offered a job through one of the people I knew through the placement. This is why I value this as the highest opportunity for people looking to get into the industry, the experience, insight and contacts you build in the industry during a coop or apprenticeship are invaluable.

Ultimately if the full time job hadn't have been offered to me, I likely could have moved on and been offered a job through one of the people I knew through the placement.

## INDUSTRY EVENTS AND NETWORKING

Yes I know it sounds like I'm a recruiter but the honest truth is getting to know people is a huge part of industry. I can't count the number of times someone's handed me their card or I've given them mine only to pass along their resume to my human resource department. These types events are really important to not only sell yourself but just to meet people.

Maybe you can learn something about roofing at an event, or a new lead on a project, maybe you can find someone that shares the same struggles as you. No matter what comes out of these types of situations it's rarely bad.







## JUST JUMP IN

Ultimately no matter what you do just getting involved and showing interest is the first step. There are a lot of really good people out there who are happy to pass along their knowledge and stories, so just finding those people and listening is a good first step.

## Growing Your Construction Business

Growing your construction business is one of the most important parts of any company. Maybe you're just starting your own construction company, or maybe you're already part of a medium sized business but want to help it grow. Building your business in construction takes hard work and regular fine tuning.

Many people start and fail, but following the below steps you'll find success in no time.

## NETWORK LIKE A BOSS

Our industry is built on relationships and some of the best opportunities in my career have come from people I know who are already in the industry. Knowing people not just in positions of influence but also people who are up and coming in the industry can win you work. Just because someone doesn't have work now doesn't mean they won't in a few years time.

For networking focus on a few areas:

**Foster existing relationships** – for the relationships you've already built continue to stay in touch with those people, keep notes on all of the people you come in touch with in order to build a more personal relationship.

**Build New Relationships** – construction always has people looking to meet others. To find them consider attending networking events for your local construction associations. Join a local leadership club, or take part in events which are for industries you are interested in doing work in. For example – if office fitups are your thing look for banking networking events or accounting networking events. Alternatively events for architects and interior designers can often give you the lead or heads up on upcoming projects.

**Social Network Is For Construction Too** – sites like LinkedIn and Facebook offer valuable networking opportunities (check us out on Instagram, LinkedIn and Facebook at the links at the bottom of this page). They offer an easy way to stay in touch with people and cold call new people. Use these tools to expand your reach and make sure people know you beyond your immediate umbrella. Things such as blogging can make people see you as an expert in your field and approach you for new work.

Below are a few resources for you to check out:

- 10 Tips for People Who Hate Network
- Network Tips for People in Construction





## BID AND PROJECT REGISTERS

All public works must be publicly tendered in Canada and North America, as such there are extensive tender call lists available online through the government. In addition, often times your local construction association typically helps to facilitate tenders. These are great resources to help you find new construction work available in the industry and submit pricing for it.

While these lists aren't always free to join, they are useful and can put you in touch with people you may not have had the chance to work with in the past. As always, when pricing this type of work, there will be a wide range of clients so risk will be hire. Make sure you do your research before taking any project.

Below are a few links to examples of bid registries:

- Ontario Works Registry
- Merx

## FOLLOW UP WITH PAST CLIENT

Repeat work is always the best and just because someone didn't hire you back right away doesn't mean they wouldn't be interested in working with you again.

A great story of mine is a client who I thought didn't enjoy working with me. After the project was completed the client then went and worked with several other contractors. Throughout those experiences the client would constantly call me and ask me for advice or my opinion. After the projects were completed we then became someone he trusted and in turn were awarded much more work.

Repeat clients can give you some of the most reliable and lowest risk work. Stay in touch with people, meet up for coffee, lunch etc. If not for a business opportunity than just to see how someone is doing.

## DO WHAT YOU SAY AND SAY WHAT YOU'LL DO

This goes for any business but is especially true in the construction world. Our industry (like it or not) has a reputation for taking advantage of people. Part of the reason for this is because not everyone understands our industry.

By doing exactly what you say you're going to do and breaking down the steps to your clients in easily understandable chunks you can set yourself apart.

Noone likes a contractor or subcontractor that goes over budget or get's behind schedule, but things change and these sorts of things happen. Be honest with individuals when these challenges creep up and you'll find repeat clients.

Ultimately doing well in the construction business comes down to delivering projects, building trust with individuals around you, working hard and not being afraid to be social.

Do you have any other recommendations for building your business? Share them with us below in the comments!



## Conclusion

By now you've all had the chance to learn about all of the different aspects of a construction project. When I opened this book I noted that our industry was notoriously closed off and isolated from one another. Because our work is primarily judged by how many percentage points we make on a project we tend to keep our knowledge internalized and not share it with others in fear of losing our competitive edge.

I challenge you to take what you've learned in this book and share it with others. Either share the book, grab drinks with a competitor, an owner, a subcontractor and share what you've learned. Sharing knowledge will make us all stronger individuals and help to propel our industry forward.

Together if we all care about our industry we can make it better.

I thank you for reading this book – for ongoing blog articles and advice make sure to check out <https://www.cnstrctr.com> and if you're interested head on over to <http://www.52constructiontips.com> to join our free mailing list where we send out weekly advice.

Lastly – if you have any feedback feel free to reach out to the cnstrctr team at [webmail@cnstrctr.com](mailto:webmail@cnstrctr.com) – we will be more than happy to return any questions or comments we get!

**Happy Building!**