

CIVIL ENGINEERING PROJECT MANAGEMENT.

SUBCONTRACTORS PLANNING AND COORDINATION.

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Table of Contents

Contents

Executive Summary	3
Terms of Reference	3
Procedure	3
Findings.	4
Selection process for the Principle contractors/subcontractors.	4
Communication during the Construction Process.....	5
Monitoring and evaluating subcontractor throughout the project.	6
Completion and payment of satisfactory work.	6
Refrences.....	8

Executive Summary

The purpose of this report will be to discuss the major issues with regards to subcontractors planning and coordination within complex construction scenarios. The report examines how subcontractors participate within each stage of the project from inception to completion.

Terms of Reference

The principal focus are:

1. Subcontractor involvement throughout the project life cycle.
2. Project managers involvement with the subcontractors throughout the project.

The report was constrained by the information given and researched and the need to complete it by 9th January 2018.

Procedure

This section identifies the research sources used. The research included is from a variety of sources e.g. websites and text books secondary set out in the references and bibliography.

Findings.

Selection process for the Principle contractors/subcontractors.

The selection process for the subcontractor is carried out during tender process as part of the pre construction phase. This is vital process within any construction project, given this could impact the project in a negative manner affecting the quality and duration of the scheme. It is therefore considered that a closed (selective) tender should be carried out to ensure contractors have adequate experience, are financially viable and have adequate resources and skills to complete the project within the required standard and the allocated time. Prior to tender process commencing, it's an ideal opportunity to evaluate the contract and potentially introduce any financial incentives. This could be in the form Key performance indicators (KPI's), whereby the contractor must meet certain deadlines to achieve the financial rewards set out in the contract (Rhondda Cynon Taff County Council 2017).

Image below identifies that Key Performance Indicators are the most widely used tool in terms of performance. This is why the use of KPI's within construction contracts can be extremely affective.

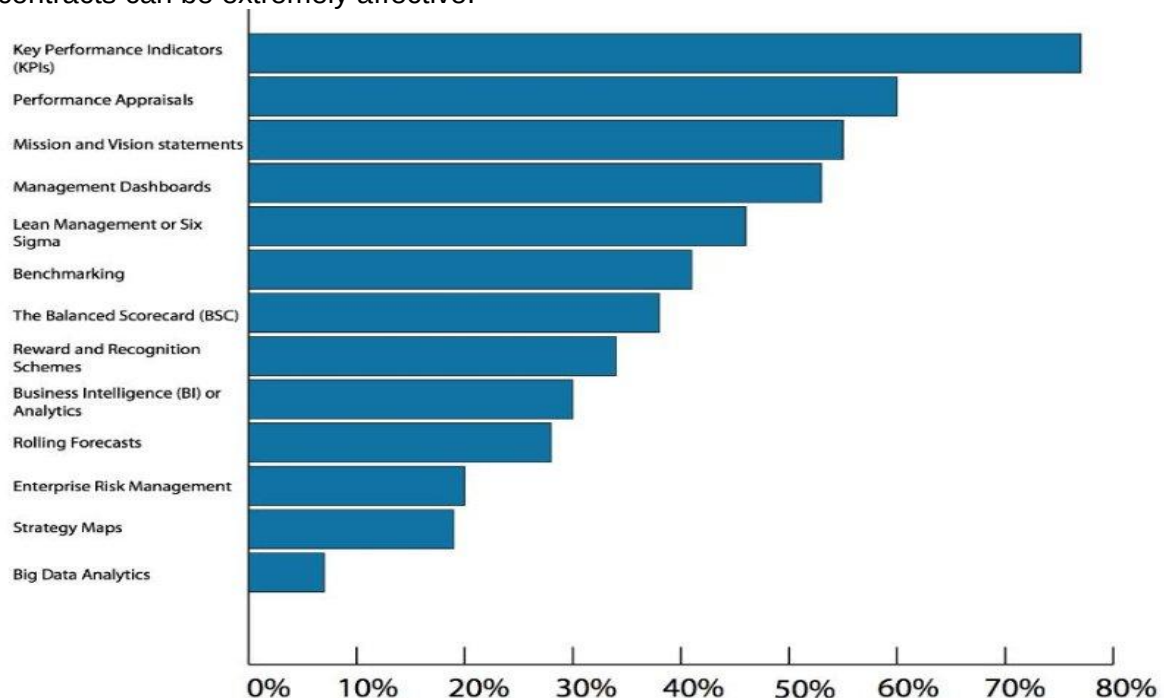


Image sourced from - <https://www.linkedin.com/pulse/20140522054403-64875646-the-5-most-popular-tools-to-manage-performance-good-news-and-cautionary-tales>

As an employee within the local authority a framework contract is used to ensure all the contractors are suitable for a variety of Civil engineering projects. This form of closed Tender is good example of how the contractors are able to meet all the requirements stated above, whilst giving the client confidence that the projects will be completed the requirements set out prior to construction. Furthermore this process will reduce the risks (financial) on the project, allowing the client to potentially expand the scope of the scheme if required (Rhondda Cynon Taff County Council 2017).

Communication during the Construction Process.

It is the responsibility of the main contractor/client to appoint the appropriate subcontractors for the project. Once the subcontractor has entered into an agreement with the principle contractor, it is the principle contractor responsibility to monitor and evaluate their performance throughout the project (Juan . A Ferriz . Papi G. 2017). Prior to subcontractors entering the construction site its essential that they are made aware of the health and safety requirements on site. The subcontractor should be aware of:

- Potential Hazards on site
- Site rules and safety procedures
- Personal Protective Equipment (PPE)
- Any Special equipment needed
- Emergency Procedures for Subcontractors as they must comply with HSWA and other H & S legislation. (Juan . A Ferriz . Papi G. 2017)

During these initial stages it essential that any training requirements are identified in order for the contractors to be made aware of the safety issues on site and to be able to undertake task competently. Offering training opportunities at an early stage has been shown to promote loyalty and motivate subcontractors prior to construction commencing (Christopher J. Flynn 2009).

Once the construction phase has begun, it is essential that all the subcontractors cooperate and communicate well with the project manager, as these are considered to be two of the most important aspects within any construction project . In order for any project to be successful is essential that any information is relayed in a timely and efficient manner. This can achieved prior to the construction phase by providing a communication plan, which will detail all the relevant personnel that can be contacted throughout the scheme . The plan could also provide details of when progress meetings are scheduled. Regular progress meetings will provide all parties the opportunity to discuss any issues or problems they can foresee and following which they can be resolved quickly, reducing the impact on the scheme. During these meeting it is crucial that all attendees have time to discuss the project and their involvement, this will make everyone aware on how project is progressing and that all subcontractors are able the meet the time scales without any obstacles.

Alongside these progress meeting, it is also important that the client has regular review meetings, as this will be a good opportunity to discuss project progress with the client. Details disgust within the meeting could include cost review of the project, any issues that have occurred on site and also whether the site is progressing as per the programme (Holden, P., 2015).

Another benefit of having regular meetings between all personnel, is that it allows for all the different subcontractors to form a good working relationship. Having a good working relationship on site could prove crucial in dealing with an problems that might occur throughout the project, whereby there may be need for a number of different subcontractors work together and cooperate to meet the needs of the client/project manager.

Monitoring and evaluating subcontractor throughout the project.

As mentioned earlier, regular progress meetings will not only provide the opportunity to discuss if deadlines are being met, it will also provide a chance to discuss the workmanship and quality of work on site. Following these discussion, there should be adequate time to rectify the issue that have been raised during these discussions.

Having been employed as a site supervisor within the local authority, it was my responsibility to monitor standards on site, and issue any defects I felt necessary. I personally found this method very affective as I would initially establish a good working relationship with the contractors on site, and in turn they would provide me with an acceptable standard of work and rectify any defects before even going through the formal channels.(Anon 2017), 'The importance of supervision on construction sites' , concurs with my opinion and also emphasis that the site supervisor has an equally important role to play in ensuring that the site is safe and secure for all persons that will have access to the site. As a result, Safety inspections should be carried out on regular basis either by the site supervisors or the site manger or both. These inspections will ensure that all walkways are clear and free from obstruction. It will also ensure that all materials are stored correctly on site, as this would not only be safety concern it could potentially impact on the productivity of the site.

Similar to other employees on site, it is equally important for the site supervisor to communicate and relay information in timely manner to ensure that all the defects are recorded and dealt with in timely manner. The importance of good communication throughout the project can't be emphasised enough, as this is a critical aspect without which the project would suffer.

Completion and payment of satisfactory work.

To maintain a good working relationship between subcontractors and client/project manager it is vital that the subcontractors complete the tasks allocated to them. Following which payment can be issued, which will be in accordance with the payment details within the contract. Given that the contractor could be on site for a lengthy period, Interim payment certificates commonly issued for works carried out up to a certain period.

Once the project is completed the project should move on to the handover stage, whereby all documentation should be checked and available to view. Equipment should be tested to ensure it is safe and fit for purpose. Furthermore, during this stage should also provide the contractor an opportunity to offer a final inspection of the project. This process should be a formality as the any defects would have been identified and rectified during the construction stages. In conjunction with the contractor inspection, the design team should also carry out their final inspection and highlight any issues they might consider a concern. However as stated earlier, defects at this stage should be very minimal given the supervision throughout the project.

As part of the handover a health and safety file should be provided to the client .The health and safety file must contain information about the current project likely to be

needed to ensure health and safety during any future work, such as any maintenance, cleaning, or any remedial works. On receipt of the Health and safety file the following should be contained within the document

- "a brief description of the work carried out;
- any hazards that have not been eliminated through the design and construction processes, and how they have been addressed (e.g. surveys or other information concerning asbestos or contaminated land);
- key structural principles (e.g. bracing, sources of substantial stored energy including pre- or post-tensioned members) and safe working loads for floors and roofs;
- hazardous materials used (e.g. lead paints and special coatings);
- information regarding the removal or dismantling of installed plant and equipment (eg any special arrangements for lifting such equipment);
- health and safety information about equipment provided for cleaning or maintaining the structure;
- the nature, location and markings of significant services, including underground cables; gas supply equipment; fire-fighting services etc;
- information and as-built drawings of the building, its plant and equipment (eg the means of safe access to and from service voids and fire doors)" (The Construction (Design and Management) Regulations 2015).

The Health and Safety should be enough detail to allow to identify and potential risks to those carrying out any works on the building/ structure in the future. The Information contained within the file must be in a suitable form, clear, concise and easily to understand.

References

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