
Construction Claims Mitigation in Design and Build Contracts ¹

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Abstract

The design and build contract strategy are progressively developing and applied in various project types for its advantages like, time compression, cost certainty, creativity and innovation, design liability transfer, and claims and risk management. Although design and build contract (DB) strategy is a mean of claims mitigation in construction projects, it proved that some secondary risks may evolve when applying the risk mitigation strategy through using the design and build contract strategy. The contract parties' obligation in the (DB) contract always has some latent disputed risk allocation obligations and entitlements. This paper discusses the advantages of the DB contract delivery method and identifies the recommendations to ensure the effectiveness of this type of contract in mitigating the construction claims.

1. Introduction

The traditional design bid build (DBB) contract strategy determines properly the contract parties' rights and obligation as the design liability is allocated to be under this design entity whether it is in-house design team or an independent design firm. The applicable civil laws oblige the contractor to strictly perform the employer's design without any tolerance, maintaining the professional conduct and good faith as the contractor is obliged to notify the employer for any defects he may found in the design. Should the contractor meet the contract design, he is relieved from the liability of the project defects related to the original design if any? This situation creates a liability gap where the design liability and the construction liability are spited between two entities. A main source of disputes in construction is that the determination of the liable party for a defect in the DBB is complicated by virtue of three different parties involved in the project, i.e. an employer, a designer, a contractor. It is usually rigorous endeavor to identify the defect as a design defect or a defect pertinent to the construction process. Additionally, it is always disputed to reach an agreement for the root cause of the defect due to each party's interest to evidence its innocence and that the other trade is the root cause of the defected work.

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The design–build strategy entails some changes in obligations of the contract parties as the design risk is allocated to a competent contractor who can carry on the project design and the construction process as well in a single contract agreement which contributes to project time compression, maintaining the cost and quality (Solis 2009, Tulacz 2006). . This risk allocation approach is a promising means that needs to be supported by the legal contract language which clearly identifies the parties’ obligations and the extent of design liability being transferred to the contractor. The contractor usually assigns a competent design firm to carry on the design process entirely and shall be liable for all the design outputs through a contractual relationship between the contractor and the design firm. The prudent contract parties shall seek a competent legal counsel to draft their needs and agreed terms into contract conditions in order to avoid potential design liability claims and disputes. This paper will provide an overview of the liability and the D&B contract features in addition to the recommendations to mitigate the project claims by using this contract strategy. Due to combining the responsibility for the design and construction in one design builder, all responsibilities are transferred to the design builder to comply with cost, schedule, and quality control (Tianji, et al. 2005).

2. Liability of the contract parties

2.1 Contractor’s Standard of Care

The construction contract obliges the contractor to produce the work free of defects, within the agreed quality and as per the signed contract. Similarly, the contractor will be in default if he did not provide the contract requirement and the corrective action to be at his own risk and cost to maintain substantial compliance with the contract documents.

2.2 Designer’s Standard of Care

It is defined as “the ordinary and reasonable degree of care required by a prudent professional under the circumstances” (Joseph A. Demkin, 2001). The design firm is obliged to provide the standard of care as of the appropriate level of care and skills/competency applied in the domain within comparable circumstances in the same area and time (not the standard of perfection), it is known as professional negligence, usually proved by a testimony of an expert witness in a court case or in front of an arbitration panel. However, it is common to find a signed agreement between an employer and a designer which limits the standard of care to certain level. In some projects the employer may require higher level of standard of care on the designer; hence they draft the contract with the language that exceeds the professional standard of care or negligence. The contract language may include additional liability on the designer to refute the challenges to prove negligence by requiring that the designer expressly warrant his design.

2.3 The Employer standard of Care

The civil law does not hold the contractors responsible for defects and, discrepancies and errors in the contract documents. The full compliance of the contractor with the construction contract documents, i.e. design drawings, specifications, and contract conditions holds the contractor innocent and inculcable for any failure in the project deliverables which were intended by the employer. The Employer may pursue a claim or a case with the project designer, not the construction contractor for the project failure due to design deficiencies. In the same context the contractor is entitled to recover and be compensated for the additional cost incurred by the contractor as the consequences of design deficiency, negligence, and incomplete information by the Employer.

2. 4 Rights of Third Parties to Litigate Designers

The contract language should explicitly account for the designer liability, limitations and scope of work. This shall limit the viability of the third-party claim against the designer of a building or a facility for his negligence considered to cause an injury to the claimant i.e. third party and not a party to the contract. The arbitration panel or courts recognize the third party owed care held by the designer although no contractual relationship in place. The court decisions are clear and hold the designer to be culpable for its work that injures a building user and the house owner is not responsible to report a construction defect in his building.

3. Liability Contractual Clauses

Drafting a DB contract agreement shall address certain clauses that affect design liability, construction work, and the procurement process. The common five clauses are discussed in the following section.

3. 1 Employer Information Disclaimers

In DB procurement strategy the Employer normally provides a significant volume of information as an Employer requirement and information provided to the bidders to consider while preparing their proposals for a potential DB project. Those documents include but not limited to, Preliminary design, geotechnical reports, project coordinates, setting out data, survey data, underground existing utilities, as built drawings, and any other available site data that can impact the required design and project intended purpose. It is worthy to add and furnish all available information in this stage to be available for all bidders use in order to satisfy the employer obligations and to receive consistent proposals by the different bidders. The risk associated to the employer provided information may develop some evidenced construction claims that the contractor can levy to recover his damages or additional cost as the consequences of utilizing the said information in his design and proved to be the cause of the project failure or design deficiencies. To eliminate such risk, the employer typically transfers the risk to the contractor and relieve himself from liability by a contractual disclaimer included in the contract agreement as express term that all information provided by the employer should be reviewed, verified, and determine its correctness by the bidders as well as it is confirmed that the contractor use of such information is at the contractor's sole risk without any liability to the employer.

3. 2 Design Development

Because the design process is a core element of the contract scope of work, it is a main part of the contract conditions to address the design process. Those conditions become the guidelines for the design liability identification and design process administration during the contract execution. The prime intent is to transfer the design risk to the design bolder and eliminate the employers risk related to the project design entirely. The design risk transfer strategy generates another secondary risk which is the employer's liability in the design review as he will be requested to check/review the design prepared by the design builder. Prudent employer should recognize that the more involvement in design reviews the higher risk is transferred back from the design builder. In the contracting stage, the employer should decide his tolerance based on the organizational risk tolerance in such design risk, consequently, he selects the appropriate contract draft to manage this concern. Typically, the employers who decide the DB strategy for their projects tend to include a clause in the design–build contract, which eliminates the employer liability for and design errors either by involving their legal counsel or applying a standard form of contract like the Yellow Fidic, 2017. The clause shall include the language which demonstrates that the employer review or approval of design submissions and the Construction Documents by the contractor are for the determination of establishing Design–Builder's compliance with the requirements of the Contract Documents. The employer's review or approval interim or final design shall not be deemed to add any liability to the employer or transfer any liability from Design– Builder to the employer.

3. 3 Standard of Care and Warranty

All construction contracts oblige the contractor to deliver the project in compliance with the contract, the agreed quality, flawless material, and execution in an accepted quality as per the contract specifications. In DBB contract and as the contractor is not liable for the design so the contractor is not obliged to warrant the work delivered, while in DB contracts the design builder accepts to receive the design liability which is transferred from the employer and consequently he warrants the work delivered to the employer and is obliged to express the standards of care and warranty on his design services and as per the contract language may enforce the warranty of the work delivered as expected from a prudent, skilled and experienced contractor and design professionals on comparable work.

3. 4 Indemnification Conditions

The contract parties agree to identify and determine the bases and process for indemnification through the contract clauses that obligate a party to reimburse the other contract party for damages indicated in the indemnification clause. This clause shall include certain basic obligations on the indemnitor like, he is obliged to protect the other party against any third party claims, settle the indemnified party's legal fees. In DB contracts the parties usually stipulate specific subjects related to indemnification clause, including the taxes, customs, claims, indemnities for clear breach, tax, liens of subcontractors or vendors, and any damages and costs incurred by the indemnified party due to the design builder action or inaction which will establish high cost impact on the indemnitor. It is recommended to draft the indemnification clause with the extensive list of

compensated events to avoid further claims based on the interpretation and legal situation for every event or case.

3.5 Limitations of Liability (LoL)

The threshold of the liability on a contract party is limited by the contract conditions. A clause for the limitation of liability controls the liability on a party to pay a limited and identified amount with a maximum amount as a consequence of his conduct in the signed contract. The upper maximum amount may be evaluated as a percentage of the contract amount. Some concerns are considered in identification of the compensated damages. The contract parties usually exclude the liability for consequential damages and other events may be listed and specified in detail and with specific reimbursement amount. Claims related to a party liability are restricted to the upper limit agreed as a LoL in the signed contract.

4. Liabilities in Contract Administration and Procurement

The design build contract contains different elements related to the administration process and procurement procedure that affect the design liability in the contract. The main subjects affect the design liability are; differing site conditions risk allocation, tender design content, alternative design proposals, and design review process and procedure. The contract parties need to address the related clauses carefully to manage the potential risk that may arise from each of these subjects if complicated circumstances develop. Prudent contract parties shall consider the mutual understanding of these subjects as construed in the following points:

4.1 Site Conditions Risk Allocation

The geotechnical reports provided in the bid documents initiates the risk on the employer and the geotechnical studies carried on by the contractor may differ, that establishes the need to draft the proper clauses for differing site conditions and allocate the agreed geotechnical risks to the design builder. The employer is to select the level of risk sharing depending on his risk tolerance and the project risk threshold. The balanced risk sharing considers some relief to the contractor for additional cost and time related to the subsurface conditions which differ from the contractual site conditions or the conditions differ from those normally expected as a characteristic for the project type of work. As obvious from this subject it is a fertile ground for claims in the design build contract, so it needs consistent clauses and carefully drafted.

4.2 Tender Design Content

The information provided by the employers in the tender stage is considered a part of the contract and enforced by the court; however, the employer may be keen to add a disclaimer that shifts any risk in such provided information to the contractor/tenderers. As the courts may not accept such disclaimers and the employer standard of care is enforced, the employer shall consider the secondary risk generated by the disclaimer and tack account for the associated time and cost impact. Claims mitigation starts from the employer understanding of the level of design details should be furnished to the tenderers and to be determined as it is rationale to the risk retransferred

to the employer i.e. increases with the level of design details provided and the employer needs to have control over definite design process stages.

4.3 Alternative Design Proposals

The employer prepares a request for proposal (RFP) and provides it to the proposers to get their technical and commercial proposals. The proposers may develop some alternatives to the original concept provided in the RFP including some changes which are deemed to provide an alternative design which should be not less efficiency than the original solution in the RFP or providing an improvement to the original design concept. The innovation and creativity approach should be encouraged by the employer through specific provisions in the RFP where the proposers can apply their experience to provide alternative design solutions. The submitted alternative advantages are related to value engineering and cost benefit outcomes, while it may be an area of disputes raised by the losing tenderers asserting that the selected proposal was not justified as the best proposal.

4.4 Design Reviews

Various construction claims and disputes evolve in DB contract substantiated by the design review process carried on by the employer. The employers define their review process for design-build projects and the level of control in the design review stage particularly because the design process and design review are critical path activities which drive the project completion date. The contract parties usually agree for employer level of involvement in the design review and to identify minimum number of design review stages. The due care is required by the employer in order to avoid directing the design process and design approach to a certain direction while maintaining the employer ensures that the design outcomes satisfy the employer's requirements and eliminate any potential claims for the cause of design errors either under the contract or as tort claims. The employer involvement on the submitted design for review should be stipulated in the contract and to protect the employer from being held liable for the design carried on by the design builder. Change management is a critical concern during the design/design review process as the employer's review can be construed as constructive changes which may entitle the design builder for time and/or cost reimbursement. The design review scope can be the key aspect in controlling such potential changes, some contracts language limits the employer review process to be for the acquiescence with the contract requirement and preliminary design. Moreover, the employer may be keen to maintain higher control in the design process and this requires including a tailored clause to state for the rights of the employer to the extent agreed, hence the employer can review, advise and comment on the submissions.

5. Featured Claims Causes in Design Build Contracts

5.1 Deficiencies in the Employer's concept Design

Although the design and build contract transfers the design risk to the design builder, the employer standard of care liability entitles the injured party for remedies in case of preliminary design errors or any defect in the bid documents which could be identified by the experienced bidders in the pre-contract phase. Despite the employer's arguments and disclaimers inserted in RFP and the final design approvals, different courts ruled to the contractor benefit as the courts considered the information provided initially by the employer were used by the contractor to prepare the proposal as a response to the RFP. Knowing this, the employer can be acquainted with the limitation of the design liability can be transferred to the design builder. Claims mitigation in this category is simply through providing accurate and confined information in the RFP.

5. 2 Discrepancies in Preliminary Design and Project Specifications

Several court cases have been ruled based on the base the any bidder in a design build bid is not obliged to prepare a design or evaluate or review or scrutinize the preliminary design provided by the employer to demonstrate any existing errors during the bidding stage while the bidder is merely requested to submit a proposal. Even, Spearin Doctrine applies when a claim is established for causes related to specific performance specifications which conflicts with the project specifications. It is normal practice have many claims raised by the design builder for causes related to changes based on the errors found in the preliminary design provided by the employer. The employer argues that the Spirean doctrine should not be applicable in these cases while the design builder asserts that the preliminary design is provided by the employer and the changes are related to performance specifications which should entitle him for a constructive change. Claims mitigation initiative starts from the contract documents through identifying the specifications to be performed and the level of warranty and care to be carried by each party.

5. 3 Geotechnical Design Scope and DSCs

It is not unusual to experience differing site conditions disputes in different design build projects. The geotechnical design claims evolve because the employer prospective is to transferee the design risk and all related risks to a competent design builder. Unfortunately, the court cases have revealed that this prospective can be partially enforced and the design builder can substantiate a claim based in differing site conditions which have impact on the design development process. Although the employer's disclaimer of liability for the information provided in the RFP, the employer remains liable for the provided geotechnical information. Other raised claims are based on foundations and underground soil conditions that affect the building structure system. The design and geotechnical reports interaction shall be impacted by the disclaimer language. As long as design builder is required to include in his design a complete geotechnical report and study for the sign strata, so the design and build contract should include the relevant conditions. Additionally, the contract clauses should have the disclaimers opted by the employer for the liability for the geotechnical information provided by the employer to the contractors/proposers during the tendering stage. The disclaimer can be a tool to challenge any contractor's claim related to experiencing differing site conditions in the construction phase. The other challenge to rebut such claims is that the contract conditions oblige the contractor to complete the comprehensive geotechnical study.

6. Claims Regulators for Design Build Contract

Design and built contracts have some main regulators that ensure effective contract strategy. Those regulators require diligent planning and control to accomplish a successful project with mitigated claims arising out of the contract. As shown in figure 1 there is mainly four regulators which this research considers and is providing the recommended practice to have effective outcomes from the DB contract strategy. Those regulators are design liability management, time compression, cost certainty, and risk management.

6.1 Common Types of Construction Claims

The control for the interaction between those regulators and different types of claims provides the claims mitigation achieved by the design and build contract which has a prime goal to achieve a successful project in less time, transfer the design liability to the design builder, and also maintain the four mentioned regulators. The following section will discuss the mitigation of the common types of construction claims through the design and build contract.

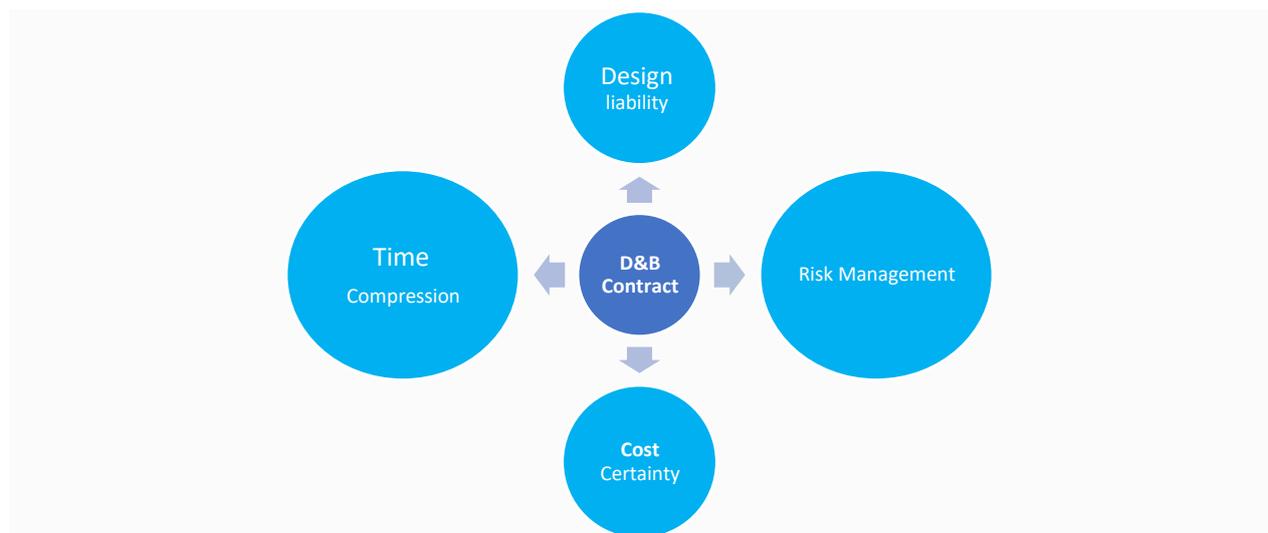


Figure 1 Regulators in Design and Build Strategy

i. Design claims

In DB contract the contractor is responsible for the design process and accepting its liability he shares his experience in the design solutions and design deliverables. From design and construction claims prospective the contractor will have less challenge and will find difficulties to negate an employer claim or third-party claim related to design outcomes. The design and build contract properly limited the claim related to design liability and narrowed the design claims commonly levies in the traditional DBB contract strategy. The design liability clauses and risk allocation adopted in the DB contract is the driver for claims mitigation. The secondary risk of the DB strategy remains the contract language and the disclaimers associated with the preliminary

design provided by the employer. Likewise, all commercial contracts, the DB contract needs professional drafting and the organization should seek legal advice correct interpretation of its requirement into the contract document.

ii. Extension of time claim

The prime feature and advantage for the DB contract is that it is a mean to complete a project in shorter time for the fast track approach to start construction with sufficient level of design completion while the design is completed gradually. Although the contract SOW in the DB contract is deemed carefully defined, it remains partially detailed subject to design completion and approval by the employer. The detailed design and approval duration should be identified in the contract documents in order to maintain the base line schedule and achieve the completion date to reflect the advantage of the DB contract in getting the facility/building in shorter time. The potential claims in this subject are usually raised by the contractor and his evidences apart from the instructed changes, are those associated with the employer's review and category of comments which the contractor considers himself to be entitled to additional cost and or extension of time.

The mitigation of this type of claims is carried on through the following:

- ✓ Prepare the project schedule to account for sufficient submit/review time.
- ✓ The contract document should include a detailed review process
- ✓ The assigned reviewer/s should be familiar with the project type and DB contract type as well to be acquainted with the review requirement in DB contract.
- ✓ The design criteria, codes, specifications, and employer intent should be clear and integrated in the contract documents with zero tolerance for discrepancies.
- ✓ Entire project team competences to be ensured including:
 - design staff
 - site team
 - project manager
 - Design builder experience in the same project type.

The lump-sum nature, design and construction process identified in the contract are the drivers for claims mitigation.

iii. Scope claim

The Lump-sum contracts documents forming the design build contract are prepared by the employer in addition to the proposal received from the selected design builder. It is one of the DB advantages to have a high certainty in the project cost; it was concluded by (Song, et al, 2009) d that the DB projects have a higher chance to be completed on budget. The contract is drafted to complete the preliminary design and for the construction phase through a coordinated effort with the employer and the proposer which provide comprehensive construction scope with the prior buy-in and reliance. In this culture, the constructive changes or design and construction claims based on original project scope definition becomes infrequent, and the claims in this area are simply challenged through the preliminary design, original employer requirement, the contractor's

proposal, and other contract documents which were the base for the project design and Lump-sum contract SOW. The mitigation for the scope claims evolves from the consistency of the mentioned DB contract documents which need merely experienced parties to implement the basic employer intent which is the time and design risks. Because the contract is a lump-sum, the contractor's proposal is a part of the contract the scope claim can be mitigated in the DB contract.

iv. Liability Claims

Inabilities are controlled in the DB contracts by a limitation of liability clause (LoL). For the claims based on design defaults or professional indemnity that may arise, it is agreed by the contract parties that it is transferred in this DB strategy to the design builder who should submit a professional indemnity insurance through an insurance company to carry the liability insurance for the public and the professional indemnity insurance PII as well. The insurance should be in the form stated in the contract and advised by the employer. It is worthy to give the preference to the local insurance companies to facilitate the communication and dispute resolution effort in case of an event deemed compensable takes place in the project. The common deficiencies that can be incorporated into a liability claim are the same groups were considered in different court cases raised by the employer as the facility/building is actually not defect-free and those four groups are shown in Figure 2.

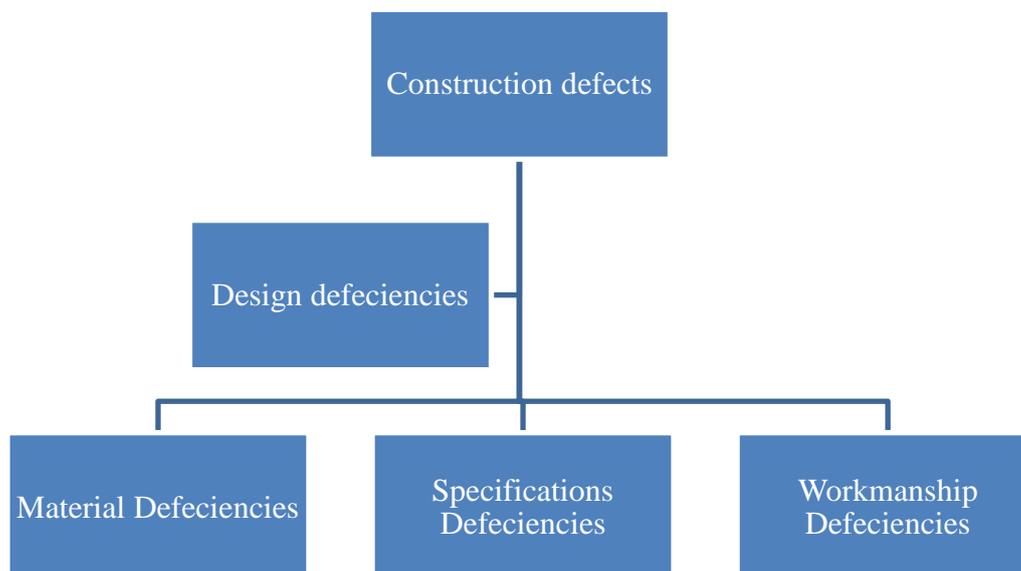


Figure 2 Construction Deficiencies

v. Termination claims

The termination clause in DB contract is rarely implemented because of the design builder significant contribution to the contract documents, mainly through his submitted proposal which contains the project understanding, integration of the employer's requirement and the preliminary design in addition to overall method statement. The termination clause is should be drafted in the language that facilitates the unexpected termination which may be the last

choice by the parties and probably termination for convenience, not for default by a party because it is deemed a collaborative contract document that were signed though mutual involvement and buy-in.

As the termination claim is actually a synergetic effect of many risks and different types of unresolved project claims, so this type of claims is mitigated through managing the root causes of different claims types and the selection of a trustworthy contractor who will prioritize the win-win solutions and maintains the business relationship with the employer.

vi. Claims for Unsustainable Risk allocation

The reasonable risk allocation in contracts is a subjective criterion and is subject to the contract party's maturity in project. To maintain the effective risk allocation, the parties need to consider some different factors related to the risk under consideration and the party's capability to adopt the risk, bear it, and foresee the risk, in addition to the cost impact to share the risk by the competent party. In design and build contracts, the employer usually tends to transfer all design and material risks to the contractor who may accept the risks which exceed the contractor's organization risk thresholds including risks that are not viable to quantify prior a proposal submission. The contractor, in this case, provides his proposal under only design drawings of thirty percent complete and he usually doesn't have enough time to review the available drawings and documents in order to provide consistent proposal. The employer allocates the unknown risks that may evolve upon the complete design development which leads to unbalanced risk sharing conditions with a secondary risk where the contractor may add a contingency for the unknown risks.

The mitigation approach in this domain is primly taken by balanced risk allocation between the parties in different categories like, the project type, contract terms, the preference and tendency of the contractor to carry on the project, the extent of the unsociable risks related to design that limits the contractor's attentiveness to perform the work.

The impact of the different regulators of DB strategy and common claims types provides the mitigation achieved from applying the design and build delivery method as shown in figure 3.

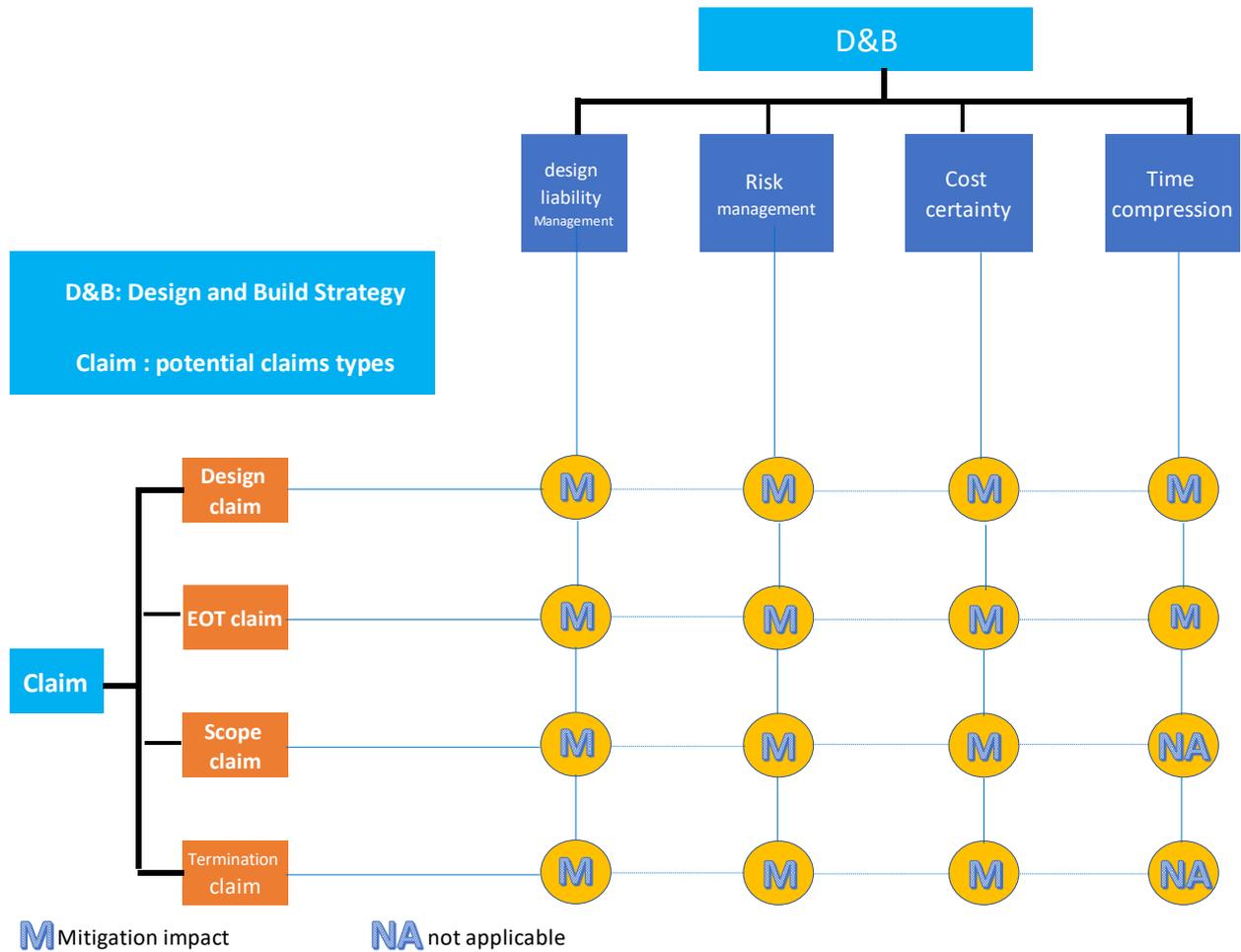


Figure 2 Impact of Design Build Strategy on construction claims

Conclusion

The design build contract strategy is an approach opted by the project owners with the desire to shorten the project delivery time and transfer the design liability to the design builder who will be selected to carry on the project design and the construction phase as well. The complications of design build contracts were explored and discussed briefly and need extensive study as it has widespread subjects and issues that affect the overall DB project. The mitigation of construction claims in different common claims types were addressed as it shows up in this type of contract. The interaction between design and build contract features and common claims type provided the recommendations for claims mitigation process with the prime title to assign prudent practitioners, in this delivery method to achieve the DB benefits in time, cost, and design risk management.

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