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Transferring project design risk

Some construction industry commentators have urged a more integrated approach to design and construction, with equitable risk sharing and an effort to ensure that project design will benefit from the experience of companies that build and supply key equipment and systems.¹ This article will, however focus on various ways in which project employers and/or designers seek to disclaim or delegate responsibility for design in ways other than awarding a standard design-build contract.

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Constructability reviews

One means of strengthening a project design is to obtain input from leading contractors who have experience with the materials or methods that are planned to be used. A way to obtain such an input is for the employer to hire a contractor before the bid solicitation to review proposed design documents and offer advice as to whether they are reasonably constructable. The following clause is taken from a 2019 contract in the United States where a ‘Preconstruction Contractor’ was retained to review the design:

‘The Preconstruction Contractor shall review the drawings and specifications in an effort to identify potential constructability problems that could impact the Preconstruction Contractor’s ability to perform the work in an expeditious and economic manner. The Preconstruction Contractor shall issue a report to the Architect and Owner for their review and action as appropriate. In addition, the Preconstruction Contractor shall promptly report to the Owner and the Architect any errors or omissions which it discovers in the drawings and specifications.

A contractor who provides such pre-bid services should take care that its contract does not incur liability for design errors that it fails to discover.’

In some jurisdictions, government agencies require a pre-bid review of design documents by a public or private panel of expert engineers

In its standard design-build contract form, the American Institute of Architects (AIA), the duties of the design-builder include a duty to advise the employer as to constructability and other factors affecting construction cost:

‘The Design-Builder shall [...] provide the Owner with recommendations, consistent with the Owner’s Criteria, on constructability, availability of materials and labor; time requirements for procurement, installation and construction, and factors related to construction cost including, but not limited to, costs of alternative designs or materials, preliminary budgets, life-cycle data, and possible cost reductions.’²

In the Netherlands, some of these issues are addressed in Article 4 sub 5 of the Dutch construction team model agreement *Koninklijke Bouwend Nederland*, 2021,³ which is a set of general terms and conditions:⁴

‘The responsibility for advice and designs lies with the person to whose specific field in the construction team those opinions and designs relate, provided that the person has accepted that advice and designs and made them his own. The parties shall give timely warning, ie before the final adoption of the Design, when a draft document is manifestly flawed or defective in such a way that they would be acting contrary to reasonableness and fairness if they were to build on it without warning. This warning obligation replaces the warning obligation of art 7:754 BW.’

In general, it is prudent for an employer’s designers to seek at least some measure of constructability input before finalising a bid package on a major project, especially where the contemplated project involves cutting-edge technologies or methods.⁵

A contractor who provides pre-bid constructability reviews should, however, take care that its contract does not impose liability for design errors or omissions that the contractor may fail to discover when reviewing the draft design documents.

Pre-bid engineering review

In some jurisdictions, government agencies require a pre-bid review of design documents by a public or private panel of expert engineers. Such reviews tend to focus on structural issues that are likely to affect public safety. For example, governments in seismically active zones may have special criteria to assure that new buildings will not collapse or fall over in the event of an earthquake. San Francisco expanded its requirements for review and approval of subsurface shoring after a tall concrete building began to tilt.

The panels of engineers who perform such reviews must be independent from the firms creating the design documents, and their members are unlikely to face personal liability if they fail to discover an error in design.

In Latvia, the prevailing construction law provides for a pre-construction design review by government-approved experts:

‘The performer of an expert-examination shall be responsible for the content of the expert-examination opinion and the justification of the conclusions included therein, within the scope of the expert-examination assignment. They shall also be responsible for the expert-examination

performed by any sub-contractors. The performer of expert-examination is not allowed to perform the expert-examination of a building design if they and the developer of the building design are considered to be related persons under the law On Taxes and Fees.⁶

‘The expertise of the third group of a buildings’ construction project is conducted to evaluate the designed building’s compliance with the requirements for mechanical strength and stability, as well as fire safety.’⁷

In Australia, the Building Codes Board offers a Model Guidance on Independent Third Party Review (2021),⁸ which has force and effect only in the states or territories which adopt it. It offers the following process for a pre-construction design review by independent experts:

Principles for Independent Third Party Review (ITPR)

1. The statutory building surveyor is responsible for the ITPR process.
2. ITPR is informed by risk.
3. Structural and fire safety designs are independently reviewed for high and very high building complexity levels.
4. The building approval applicant is responsible for engaging a qualified, competent and registered independent third-party reviewer.
5. The statutory building surveyor confirms the extent of review.
6. ITPR must be completed at the end of the design stage.
7. The statutory building surveyor is responsible for resolving any ITPR issues or disputes.
8. A certificate of design compliance is provided by the independent third party reviewer for each ITPR.
9. The cost of ITPR is borne by the building approval applicant.

In Peru, by comparison, it is rare for government agencies to require a third party to review the design before the tender process. The lack of such a review can, of course, lead to a greater incidence of design flaws.

Design coordination

If the employer’s design is allocated to multiple design firms (eg, architectural design, structural design, mechanical design, etc), it is prudent for a single party to

have responsibility for coordinating those multiple design disciplines. Sometimes this is accomplished by having a single design firm hire the other design disciplines as sub-consultants. On other projects, the architect is asked to assume responsibility for coordinating multiple design disciplines.

On many projects, each designer is asked to coordinate its work with the services provided by the employer’s other designer, as in the following clauses drafted by the AIA:

‘The Architect shall coordinate its services with those services provided by the Owner and the Owner’s consultants. The Architect shall be entitled to rely on, and shall not be responsible for, the accuracy, completeness, and timeliness of, services and information furnished by the Owner and the Owner’s consultants. The Architect shall provide prompt written notice to the Owner if the Architect becomes aware of any error, omission, or inconsistency in such services or information.’⁹

‘The Consultant shall coordinate its services with those of the Architect and other consultants in order to avoid unreasonable delay in the orderly and sequential progress of the Architect’s or other consultants’ services. The Consultant shall coordinate all aspects of its design of the Work for this Portion of the Project with the Work designed by the Architect and other consultants, as necessary for the proper coordination of a Project.’¹⁰

In the Netherlands, design coordination has changed in recent years. In 1992, the Coordinating Structural Engineer, as an Institute was abolished. Since then, a number of problems have arisen that can be traced to a lack of control over partial (or prefabricated) engineering.¹¹

If design errors are not discovered through pre-construction coordination, they may remain to be discovered during construction. As of 1 January 2024, the Dutch Law on the Quality Assurance for Construction (*Wet Kwaliteitsborging voor het Bouwen*) introduces an obligation for a contractor to employ a Quality Auditor to verify whether actual construction complies with the project building permit. The completed works may not be used until a proper declaration is received from the Auditor.¹²

In the United Kingdom, the Construction (Design and Management) Regulations 2015 (CDM 2015) promote a process that

will lead to pre-construction design coordination, at least insofar as necessary to help protect health and safety at site:

‘Appointment of the principal designer and the principal contractor

5. (1) Where there is more than one contractor, or if it is reasonably foreseeable that more than one contractor will be working on a project at any time, the client must appoint in writing –
 - (a) a designer with control over the pre-construction phase as principal designer; and
 - (b) a contractor as principal contractor.
- (2) The appointments must be made as soon as is practicable, and, in any event, before the construction phase begins.
- (3) If the client fails to appoint a principal designer, the client must fulfil the duties of the principal designer in regulations 11 and 12.
- (4) If the client fails to appoint a principal contractor, the client must fulfil the duties of the principal contractor in regulations 12 to 14.¹³

Where an employer wishes to delegate only certain defined elements of design, it can require contractors to perform ‘design assist’ services

Latvia has a similar process for designating a principal designer with responsibility for a coordinated work product. If an employer enters into multiple contracts to facilitate the development of a single design, it must identify the principal developer of the design and the developers of its components.¹⁴ Article 36 of the same Regulations adds the following detail:

- ‘36. The principal developer of the design has the following responsibilities:
- 36.1. manage the design works and coordinate the mutual compliance of parts of the design with the design as a whole;
 - 36.1.(1) ensure that all necessary parts are included in the design and developed in accordance with the design task and the conditions included in the construction permit;
 - 36.2. ensure that sufficient and up-to-date information necessary for design has been received and, if necessary,

request additional information and ensure its timely transfer to the specialists responsible for the parts of the design;

- 36.3. inform the managers of parts of the design about the scope of work assigned for their development;
- 36.4. check the conformity of the individual parts of the design with the construction task and their mutual coherence;
- 36.5. inform the participants of the process of any information received that affects or may affect the execution of design works;
- 36.6. in case of changes to the design, ensure their appropriate incorporation in all relevant parts of the design, if necessary, inform the institution that issued the building permit about the changes and organise an appropriate coordination procedure.’

Design assist

Where an employer wishes to delegate only certain defined elements of design, it can require contractors to perform ‘design assist’ services. Traditionally, these services included such elements as checking field measurements, supplemental subsurface borings, concrete mix designs, or detailing reinforcing steel or fire sprinkler pipe routes. They may also extend to various technical scopes such as foundation load calculations, complex roofing systems, and curtain wall designs.

Because ‘design assist’ is by definition assisting another designer, those who provide such services will typically wish to clarify that the employer’s engineers of record to review their work will retain ultimate responsibility for the final design.

The AIA has published a form for ‘design assist’ contracting, which describes the basic scope of work as follows:

‘The Consultant shall review documents and information furnished by the Client, and furnished by other Project Participants through the Client, that relate to the Design Assist Services and provide prompt written notice to the Client if the Consultant observes or otherwise becomes aware of any errors, omissions, or inconsistencies between such documents and information and

the Design Assist Services. The Consultant is not required to ascertain that the documents or information are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities, but the Consultant shall promptly report in writing to the Client any nonconformity discovered by or made known to Consultant.¹⁵

‘The Consultant shall not be responsible for the acts or omissions of the Client or other Project Participants. The design professional of record for the Project retains control over the design and the responsibility to incorporate Consultant-provided information into the design and identify and resolve design conflicts.’¹⁶

The AIA’s widely used General Conditions emphasise the need for contracts to be very specific in identifying which portions of design responsibility are assigned to a contractor:

‘If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, [...] The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals.’¹⁷

The AIA’s special contract form for ‘design assist’ services avoids a broad flow-down of prime contract’s obligations. Rather, it requires the parties to specify the particular provisions of the prime contract that apply to the design assist services.¹⁸

Contractor plan review

Many construction agreements require the contractor to review plans and specifications and notify the employer of any errors or omissions. This process is helpful in reducing errors and omissions in design, but it can be

abused if the contractor is asked to assume liability for errors that it fails to discover. Almost certainly, the contractor will have less time to review the employer’s design than the employer’s designers had to prepare it. Prudent contractors should therefore make clear that they are responsible only for reporting what they discover in a pre-construction review.

Many construction agreements require the contractor to review plans and specifications and notify the employer of any errors or omissions

Latvian law illustrates the principle that contractors should be liable for design by other parties only where they detect ‘obvious violations’:

‘A construction specialist, except for when obliged to supervise or check the work of another construction specialist or its result, is entitled to assume that other construction specialists involved in the implementation of the construction project are acting in accordance with the requirements of regulatory acts and performing their professional duties in a quality manner. If, based on their professional knowledge and experience, a construction specialist detects obvious violations of the requirements of regulatory acts in the professional activity of another construction specialist, they must act to prevent harm to life, health, property, or the environment.’¹⁹

In a recent prime contract, adapted from the 2017 *FIDIC Red Book*, the contractor’s liability arising from reviewing the drawings and specifications is more broadly stated:

‘1.9.2 Scrutinising the Specification and Drawings

During the Scrutiny Period the Contractor shall fully scrutinise the Specification and Drawings. No construction Works shall be commenced until such scrutinisation is completed.

The purpose of such scrutinising is to detect any errors, discrepancies, omissions in the Drawings and Specification (but not in the quantities indicated in the Letter of Tender) which objectively could not be detected during the Procurement process and which could adversely affect the performance of Works within the Accepted Contract Amount and Time for Completion, as well as which

could adversely affect the compliance of the buildings and structures to be built as part of the Works with all essential requirements set for buildings and structures in applicable Laws.

When scrutinising the Specification and Drawings the Contractor may at his own risk rely on the findings of mandatory expertise performed over the Drawings; however, such relying on the findings in no way affects Contractor's liability under the Contract.

1.9.3 Notice on Errors

[...]

In case the relevant Notice does not meet the set requirements regarding its content and submission deadline, or in case such Notice is not submitted at all, it is deemed that the Contractor has confirmed that there are no errors, discrepancies, omissions in the Drawings and Specification which could adversely affect the performance of Works within the Contract Price and the Time for Completion, and which could adversely affect the compliance of the buildings and structures to be built as part of the Works with all essential requirements set for buildings and structures in applicable Laws, and thus all risks (time and money wise), related to rectifying later detected errors in the Specification and Drawings, or all risks related to performing Works without such rectification, are fully borne by the Contractor.

1.9.4 Contractor's Liability regarding the Drawings

In case an error, discrepancy or omission is discovered as per above Sub-Clause 1.9.3 [*Notice on Errors*], the Contractor shall not be responsible for performing the re-designing works to rectify such error, discrepancy or omission, unless the Parties agree otherwise in writing.

To enhance public safety, it is hereby agreed that the Contractor bears all risks (time and money wise) for all consequences in case the Contractor implements (ie, performs Works according to) erroneous Drawings and/or Specification. The mentioned among others means that the Contractor shall indemnify and hold harmless the Employer, the Employer's Personnel, and their respective agents, against and from all third party claims, damages, losses and expenses (including legal fees and expenses) as a result of implementing erroneous Drawings and/

or Specification.'

In the United States, the most widely used published set of General Conditions place a clear limit on the liability of contractors who are required to review an employer's design:

'Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner [...], shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognised that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.'²⁰

'The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.'

Where a prime contractor or subcontractor is required to review plans and specifications, standard industry practice should justify a disclaimer of liability for errors and omissions that it fails to discover. It generally seems reasonable to expect that ultimate liability for design errors should remain with the party which prepared the design.

Contractor review of predecessor work

It is fairly common for subcontractors to require that each trade contractor must check the work performed by predecessor

trades. One example of such a requirement appears in the following form contract from an international oil company:

‘If the proper execution of the Work depends upon work carried out by any of Company’s other contractors, Contractor shall inspect such work and promptly report any discrepancy or defect therein to Company in writing. Should Contractor fail so to report to Company or fail to discover such discrepancies or defects as should reasonably have been discovered with proper implementation of Contractor’s quality plan approved by Company, all extra costs of Contractor Group resulting from such failure are to be borne by Contractor.’

This type of clause obviously opens the door for disputes over which defects ‘should reasonably have been discovered’, and it can be criticised for attempting to transfer liability for design errors away from the party who made the mistakes. Where such clauses are proposed, it is common for contractors to insist that their liability is limited to reporting whatever defects their plan review actually uncovers.

In Brazil, the problems of reviewing work by a predecessor contractor were highlighted on the PPP contract for the São Paulo Ring Road. This road, intended to divert traffic around the metropolis, was divided into two sectors, each of which was separately tendered. Sector North began work in 2013 but was suspended in 2018. After several years of inactivity, a new contractor is being brought in to finish construction and operate the highway. During a 12-month pre-construction phase, the replacement contractor must assess work performed by the previous contractor and report on its status. Under the following contract clauses, the replacement contractor assumes risks associated with the previous construction:

‘22.2. Regardless of other risks expressly undertaken by the Grantor in other clauses of this Contract, the Grantor has undertaken the following risks related to the PPP:

(xviii). Costs related to the latent defect identified at any time by the Concessionaire, that evidently could not have been identified by the Updated Project for Final Implementation Works, according to Annex 18;

a. It is Concessionaire’s responsibility to provide evidence to ARTESP, based on technical grounds, that the defects referred to in the abovementioned clause

could not have been identified during the preparation of the Updated Project for Final Implementation Works, even if the scope, methodology and the procedure provided under Annex 18 were followed.’²¹

Contractor/supplier warranty for intended purpose

A number of construction contracts recite that the contractor is responsible for providing a project that is suitable for its intended purpose. Such clauses can easily lead to disputes, in part because the ‘intended purpose’ is not always fully defined or understood. Whereas an experienced contractor can prepare ‘take offs’ that will assure compliance with specific plans and specifications, it may be difficult if not impossible to price the risk that compliance with those plans and specifications will ultimately produce a fully functioning facility.

A number of construction contracts recite that the contractor is responsible for providing a project that is suitable for its intended purpose

The following is part of a standard subcontract form used by one international contractor:

‘The Specifications and Drawings may not be complete in every detail. Contractor shall comply with their manifest intent and general purpose, taken as a whole, and shall not make use of any errors or omissions therein to the detriment of the Work.’

In its widely used General Conditions, the AIA restates the goal of producing a complete project, but it limits contractor responsibilities to the work that is stated or at least reasonably inferable from the advertised contract documents.

‘The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.’²²

In the United States, a seller of commercial goods impliedly warrants that they will be suitable for their intended purpose:

‘Where the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller’s skill or judgment to select or furnish suitable goods, there is unless excluded or modified under the next section an implied warranty that the goods shall be fit for such purpose.’²³

It is, however, very common for this implied warranty to be disclaimed by contract. Moreover, US law does not imply any similar warranty as to construction services being suitable for their intended purpose.

Free from defects

In the United States, sellers of commercial goods are typically held to an implied warranty that the goods will have no defects.²⁴ This so-called ‘perfect tender rule’ does not, however, apply to construction or design services, which are more typically held to a prevailing standard of care.

In a widely used US design-build contract form, the AIA uses ‘free from defects’ language but qualifies it to acknowledge that certain defects are inherent in various types of work:

‘The Design-Builder warrants to the Owner [...] the Work will conform to the requirements of the Design-Build Documents and will be free from defects, except for those inherent in the quality of the Work or otherwise expressly permitted by the Design-Build Documents. Work, materials, or equipment not conforming to these requirements may be considered defective.’²⁵

In Peru, contractors typically provide a general warranty against ‘defects’ in the works. Therefore, if design is part of the works, the contractor’s warranty is likely to include design defects.

An alternative approach would be to specify the defects that are covered, such as saying that the works shall be free from defects in materials and workmanship. Design is not often mentioned in warranty clauses that promise that there will be no defects. Design defect liability can of course be very large if it is not limited by contract.

Although ‘perfection’ may be a reasonable standard for manufactured goods, it is generally not a reasonable standard for assessing the quality of human labour. For

this reason, contractors and designers will generally push for their work to be judged under prevailing standards of good workmanship in their respective businesses.

Estimated useful life

On some projects, the design documents indicate that the contractor should produce a final project with an estimated useful life of a certain number of years. Depending on how such contract terms are worded, such language may be construed as imposing what amounts to a supplemental design warranty.

In Peru, many construction industry contracts include a representation regarding the useful life or design life of a project or system. Such language is generally not, however, linked to a specific remedy, which may make it difficult to enforce.

‘Useful life’ is not specifically written into any of the major standard contract forms used internationally. It is not uncommon, however, for an employer to demand such a term on a major project. Employers understandably wish to maximise asset life while also controlling the ‘whole life’ cost of the built asset. Stakeholders like lenders may also have an eye on their project’s useful life as a key to determining the term of financing and the deadline for loan repayment.

As elsewhere, a contractor’s liability for the ‘useful life’ of a project or system would depend in large part on the contract wording in question and the surrounding facts. In general, however, it seems that English law would be inclined to enforce a clear contractual requirement for a designer or contractor to produce a project or system with a guaranteed useful life.

Note, however, a distinction between: (1) a party warranting that the useful life (sometimes called ‘service life’) of the final project shall be not less than X years; versus (2) a party warranting that it will carry out the design in order to achieve a useful life of X years. The latter seems more aspirational, while the former appears more susceptible of enforcement.

Guaranteeing the actual service life of the project – which may span decades – seems so fraught with risk as to cast doubt on whether it was the objective mutual intention of the parties. Under English law, the landing point for contract interpretation may be something like the UK Supreme Court’s final say in

MT Hojgaard (per Lord Neuberger): there is strict liability to meet a service life but the trade-off is that it is to be assessed within (say) the two-year defects notification period. In other words the design's ability to satisfy a 20-year service life is based on, for example, the observed rate of corrosion or other degradation with perhaps a degree of forecasting/hypothesis as to the future rate and extent of that degradation. Technical evidence on such topics may be a heavily contested grey area, perhaps pushing the limits of technical understanding. Having only that two-year window may help the designer or contractor accept some responsibility rather than being pursued in say, 'Year 19...' of a 20-year service life. Another trade-off may be that the obligor limits its liability to a 'make good' obligation rather than have any claim sounding in damages. Make good of course is very different depending on whether one is dealing with a designer or a construction contractor.

Note that a useful life is likely to depend on proper maintenance and care of the facility. But what lack of maintenance constitutes a breach of the useful life obligation will be a question of fact and degree. See the recent English case of *Blackpool BC v Volkerfitzpatrick Ltd* [2020] EWHC 1523 (TCC) which has some useful things to say on this, also some useful industry-standard definitions of service life and design life, from UK, European Community and ISO standards.

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Notes

- 1 See, eg, Eric Franco and Alejandra Verdera, 'Achieving Latin America's Energy Transition' in *International Arbitration in Latin America*, c 18, at p 434 et seq. (Wolters Kluwer 2021).
- 2 AIA Document A141-2014 Design-Build Agreement, para 4.1.2.
- 3 *Koninklijke Bouwend Nederland Model Bouwteamovereenkomst*, 2021 <https://www.bouwendnederland.nl/media/10351/2021-05-01-kbnnl-model-bouwteamcontract-2021.pdf> accessed 23 July 2023.
- 4 See also *FIDIC Guidelines to Reviewing the Work of a Professional Consulting Engineer*, <https://fidic.org/node/746> accessed 23 July 2023.
- 5 See, eg, Stephen Pettee, 'Constructability Reviews – An Introduction', (2012) <https://www.cmaanet.org/sites/default/files/2018-04/Constructibility%20Reviews%20-%20a%20primer%206-12%20versionFINAL.pdf> accessed 23 July 2023.
- 6 Art 19(7) Latvian Construction Law, <https://likumi.lv/ta/id/258572-buvniecibas-likums> accessed 23 July 2023.
- 7 Art 83 of Construction Regulations of Buildings, Latvia.
- 8 ABCB, 'Independent third party review: Model guidance on BCR recommendation 17', 2021 <https://www.abcb.gov.au/sites/default/files/resources/2022/BCR-rec17-Independent-third-party-review.pdf> accessed 23 July 2023.
- 9 AIA Document B101-2017, Owner Architect Agreement, para 3.1.2.
- 10 AIA Document C421-2018 Architect Consultant Agreement, para 5.4.
- 11 F J M Scheublin, 'Waar zijn wij aan begonnen, over enquête, maquette en etiquette' Eindhoven University of Technology, 2004 <https://research.tue.nl/files/1805320/scheublin2004.pdf> accessed 23 July 2023.
- 12 Building Quality Assurance Act https://www.eerstekamer.nl/wetsvoorstel/34453_wet_kwaliteitsborging_voor accessed 23 July 2023.
- 13 UK government, 'The Construction (Design and Management) Regulations 2015', <https://www.legislation.gov.uk/uksi/2015/51/contents/made> accessed 23 July 2023.
- 14 Art 34 of General Construction Regulations.
- 15 AIA Document C403-2021 Agreement for Design Assist Services, para 2.5.
- 16 AIA Document C403-2021 Agreement for Design Assist Services, para 2.16.
- 17 AIA Document A201-2017 General Conditions, para 3.12.10.
- 18 See Bruner and O'Connor on Construction Law, s 6:21.50.
- 19 Art 19(2) Latvian Construction Law, <https://likumi.lv/ta/id/258572-buvniecibas-likums> accessed 23 July 2023.

- 20 AIA Document A201-2017 General Conditions, para 3.2.2.
- 21 See <http://www.parcerias.sp.gov.br/Parcerias/Projetos/Detalhes/149>
- 22 AIA Document A201 General Conditions, para 1.2.1.
- 23 US Uniform Commercial Code, s 2-315.
- 24 US Uniform Commercial Code s 2-601.
- 25 AIA Document A141-2014 Design-Build Agreement, para 3.1.12.



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