BVBR-ABDC

ESCL
European Society of Construction Law

DESIGN

ESCL conference 2024

18 Oct. 2024
Antwerp, Belgium

01

The (drawings') monopoly of the Architect

Marc Schoofs – Rebecca Shorter

Outline of Presentation (UK perspective)

- Is there a monopoly?
- Who is responsible for the design:
  - In law?
  - Under the contract?
- Conclusions

Is there a “monopoly”?

- In the UK, architects have a monopoly over the term “architect”:
  - Use of the term by someone who is not a qualified and registered architect is a criminal offence, punishable by a fine of up to £2,500 (ss.20 and 21 of the Architects Act 1997);
  - Register of Architects since 1932, maintained by the Architects Registration Board;
  - Prosecutions must pass a public interest test.
- But do architects have a “monopoly” over design work…

Who is responsible for the design?

- No strict legal requirement to use an architect for design work.
- But typically, an architect is used because of the legal responsibilities on those who participate in the design process. See in particular, and most recently, the Building Safety Act 2022.
- Concurrent contractual obligations, e.g. JCT and RIBA standard forms.

Who is responsible for the design: in law?

- Legal landscape around design responsibility in the UK changed since 2017 Grenfell disaster.

- Building Safety Act 2022 ('BSA') intended to overhaul existing regulations on how buildings should be constructed, maintained and made safe.

- The BSA and associated secondary legislation (building regulations in England) assign legal responsibility to certain 'dutyholders' for ensuring compliance with building regulations, including "Designer" and "Principal Designer".

Who is responsible for the design: in law? (cont'd)

- Competency requirements of a designer:

  "**Any person carrying out … design work must have** – (a) where the person is an individual, **the skills, knowledge, experience and behaviours necessary**, (b) where the person is not an individual, the organisational capability, **to carry out** … (c) **the design work so that the building work to which the design relates, if built, would be in accordance with the relevant requirements**".

  [See sections 11F and 11G of the Building Regulations]

Who is responsible for the design: in law? (cont'd)

- Contravention of Building Regulations / breaching dutyholder duties and competence requirements is an offence (unlimited fine and/or two years in prison).

- Guidance issued by the Health and Safety Executive is not detailed but tends to suggest – in particular for a Principal Designer – that these 'dutyholders' likely to be architects.

- In October 2023, the Royal Institute of British Architects (RIBA) established a Principal Designer Register, to allow chartered members to demonstrate that they meet the competence criteria to serve as Principal Designers.

Who is responsible for the design: under the Contract?

- JCT 2024 Design and Build Contract contains a number of amendments to reflect the BSA:
  - new Article 7 which requires the parties to identify the 'Principal Designer' for the purposes of the Building Regulations; and
  - Clause 3.16 contains express obligations on (a) the Contractor, if it is the 'Principal Designer' to comply with the duties of the 'Principal Designer', and (b) the Employer, where the Contractor is not the 'Principal Designer', to ensure that 'Principal Designer' carries out its duties.
- Note also Clause 2.17.1.1 includes a warranty from the Contractor to use the reasonable skill and care in design to be expected of a qualified and experienced architect (or other appropriate professional designer) under design works of similar scope and character.

Who is responsible for the design: under the Contract? (cont'd)

- RIBA has published a new contract: the RIBA Building Regulations Principal Designer Professional Services Contract, suitable for the appointment of a Building Regulations 'Principal Designer' with a commercial client or public authority.

- May be used as a standalone contract for this specific role created by the BSA, either on its own or in addition to a design services role / contract.

- Contains contractual exclusions of liability for the design work of others appointed by the Client, notwithstanding the requirement to collaborate with those other designers (see Clauses 2.1.5, 2.3.2 and 3.2.4).

Conclusions

- In English law, the term ‘architect’ is legally protected, but architects have no monopoly over the preparation and supervision of design work for construction projects.

- Notwithstanding this, recent legislative changes intended to overhaul existing laws have resulted in a situation where an architect may be the best suited to fulfil the ‘Principal Designer’ role required by Building Regulations.

- Standard form contracts in England have adapted to this new landscape.

01

The (drawings') monopoly of the Architect

Marc Schoofs – Rebecca Shorter

The (drawings') monopoly of the Architect

Marc SCHOOFS

FAIRWAY

PARTNERS IN LAW AND MEDIATION

Marc SCHOOFS

Belgium, Lawyer, Managing Partner Fairway Law.

- 1991: law degree (VUB) and start of career as a lawyer
- 1995: Creation of ADVOCATENKANTOOR MARC SCHOOFS
- 2019: Rebranding ARKALIS PARTNERS IN LAW
- 2023: Fusion with DUX LUX and create FAIRWAY PARTNERS IN LAW AND MEDIATION

Introduction and history

FAIRWAY

PARTNERS IN LAW AND MEDIATION

Taking a look back: context

- **Law of February 20, 1939** on the protection of the title and profession of architect:
  - 1883
  - 1924
  - 1937
- **Lead-up:** anyone could practice the profession of architect
- **Consequence:** a great deal of construction was done without the involvement of specialists
- **Intensification of the trend:** reconstruction after the WW I

"Anarchy in the construction sector"

(The statement can be found in the report on behalf of the committee regarding the draft law for the establishment of an Order of Architects.)

The purpose

- **The protection of the title and profession of architect is justified by the following necessities:**
  1. The safety of the residents;
  2. The issue of hygiene;
  3. The concern for the aesthetics;
  4. The contribution to the preservation of the country's artistic heritage;
  5. The protection of the capital invested in the buildings by the project owner.
- **Goals of both public and private interest**

The monopoly

FAIRWAY

PARTNERS IN LAW AND MEDIATION

The Monopoly: let’s get theoretical

- Pillars of the monopoly
- Classic construction process
  - Design phase
  - Execution phase
  - Three key protagonists:
    - The "client"
    - The "architect“
    - The "contractor"

The Drawing Monopoly: let's get theoretical

- **Article 4:**

  "The State, the provinces, the municipalities, public institutions, and private individuals must seek the collaboration of an architect for the **preparation of plans** and **the supervision of the execution of works**, for which laws, decrees, and regulations impose a prior application for a building permit.

  Regarding public institutions and private individuals, exceptions may be granted by the Governor, upon the recommendation of the Municipal Council of the municipality where the works are to be carried out.

  A royal decree designates the works for which the collaboration of an architect will not be mandatory."

- **Sanctions**

The Drawing Monopoly: let's get theoretical

- **Scope: prior application for a building permit**
  - Vlaamse Codex Ruimtelijke Ordening (VCRO)
  - Brussels Wetboek van Ruimtelijke Ordening (BWRO)
  - Code du Dévelopment territorial (CoDT)

- **Scope: exceptions in article 4**
  - Governor
  - Royal decree

The Drawing Monopoly: let's get practical

- **No legal definition**
  - Regulation of professional duties
  - Work of intellectual nature

- **President of the commercial court of Antwerp (dep.Tongeren) in 2015**
  - Intellectual work of the architect
  - He must have studied it
  - He must have confronted it with the needs to be fulfilled
  - **Without** the material work also needing to be fully executed by him

The Drawing Monopoly: let’s get practical

- President of the enterprise court of Antwerp (dep. Antwerp) in 2019
  - Intellectual work of the architect
  - Precise instructions by the architect
  - Cass. March 30, 1976

- Support from specialists

What does it mean?

The Drawing Monopoly: let's get practical

- **Collaborations**
  - Legally not always clear-cut
    - Article 6 Law of February 20, 1939: incompatibility (+ Regulation of professional duties)
    - Regulation of professional duties: independence
    - Controller vs. Controlled
  - DB(FM)-projects:
    - Integration of various aspects (Design, Build, Finance and Maintain) into one comprehensive approach
    - Council of State (Raad van State)
      - In any case: comply with rules regarding incompatibility and independence
      - No absolute ban

Closing remarks and prospects

FAIRWAY

PARTNERS IN LAW AND MEDIATION

European Society of Construction Law • ESCL-Conference 2024
Antwerpen, 18 October 2024

ESCL European Society of Construction Law

The design liability of the Design Review Engineer (DRE = Prüfingenieur)

Prof. Dr. jur. Bastian Fuchs
- TOPJUS • Attorney at Law, New York (USA)

Prof. Dr.-Ing. Rolf Katzenbach
- Managing Director of the International Consulting Office Professor Katzenbach
- Board Member of DFI Europe • Publicly Certified and Qualified Expert

Dr.-Ing. Anke Werner
- Project Manager at the International Consulting Office Professor Katzenbach

Ingenieursozietät Professor Dr.-Ing. Katzenbach GmbH
Robert-Bosch-Straße 9 • 64293 Darmstadt • Germany
Tel: +49 61 51 - 130 13 10
Fax: +49 61 51 - 130 13 20
Mobil: +49 171 - 89 59 809
E-Mail: katzenbach@katzenbach-ingenieure.de

TOPJUS Rechtsanwälte Kupferschmid & Partner mbB
Lenbachstraße 19-21 • 86529 Schrobenhausen • Germany
Tel: +49 82 52 – 894 665
Fax: +49 82 52 – 894 640

E-Mail: fuchs@topjus.de

Legal Basis

The legal requirement and fundamental basis for the existence of Design Review Engineers is the governmental obligation to guarantee safety to their citizens according to Art. 2.2 of the German Basic Law, i.e. the German Constitution (Grundgesetz - GG) which guarantees (besides others) the right to life and physical integrity of all persons:

(2)
Every person shall have the right to life and physical integrity. Freedom of the person shall be inviolable. These rights may be Interfered with only pursuant to a law.

➡ **Basic idea:**
Application of the Four-Eyes-Principle by appointment of a Design Review Engineer to garantee physical integrity, e.g. safety

The Role of the Design Review Engineer (DRE = Prüfingenieur) in German Law:

- DRE ensures sovereignly compliance of the design and calculations with Building Regulations/Building Codes, for example: Eurocode (EN 1990 etc.).

- DRE is for each relevant project personally appointed by the responsible local Building Authority as an independent verifier for safety und serviceability.

- DRE acts sovereignly as an indipendent authority under public law and is only responsible to „his“ Building Authority.

- DRE produces the so called Test Reports (= Prüfberichte) to document the results of his independet review. The Test Reports are an indispensible condition to get the building permission, issued by the responsible Building Authority.

Fields of expertise (specialisation) of Design Review Engineers:

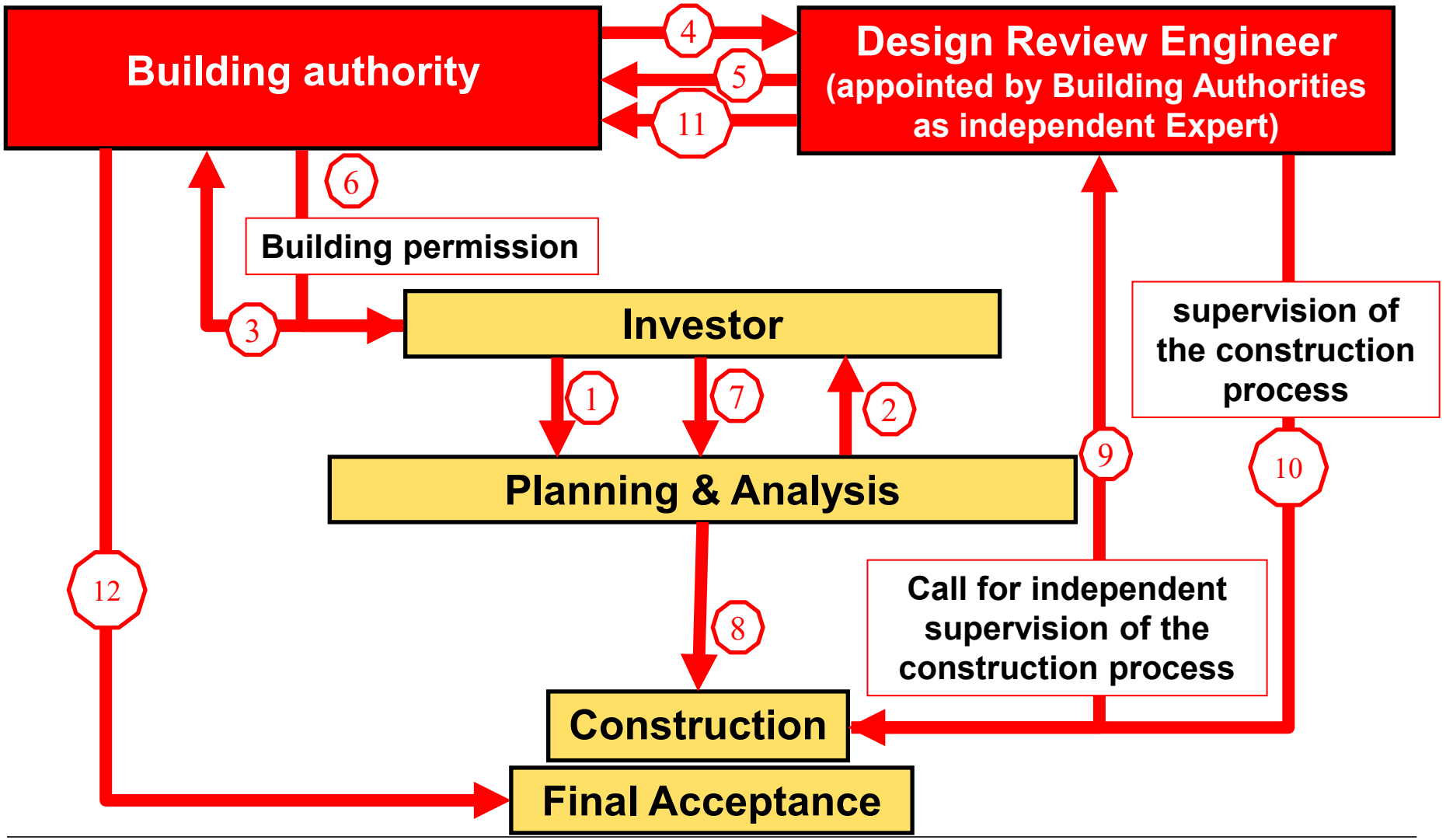
- **Design Review Engineer for structural integrity, in detail:**
  - **Solid construction,**
  - **steel and / or metal construction,**
  - **timber construction**
- **Design Review Engineer for Fire Protection**
- **Chartered Design Review Engineer for technical Systems**
- **Chartered Design Review Engineer for Geotechnics**

DRE – Legal Liability and Independence:

- **Protected under the liability privilege (Amtshaftungs-Grundsätze).**
- **Insurance requierment of € 500.000,00 per Claim (2x) and per year.**
- **State is liable unless gross negligence is involved.**

Our Experience with Design Review Engineering is mainly based on our colloboration with Frankfurt Building Authority and with the applied approval and construction procedures incl. final acceptance.

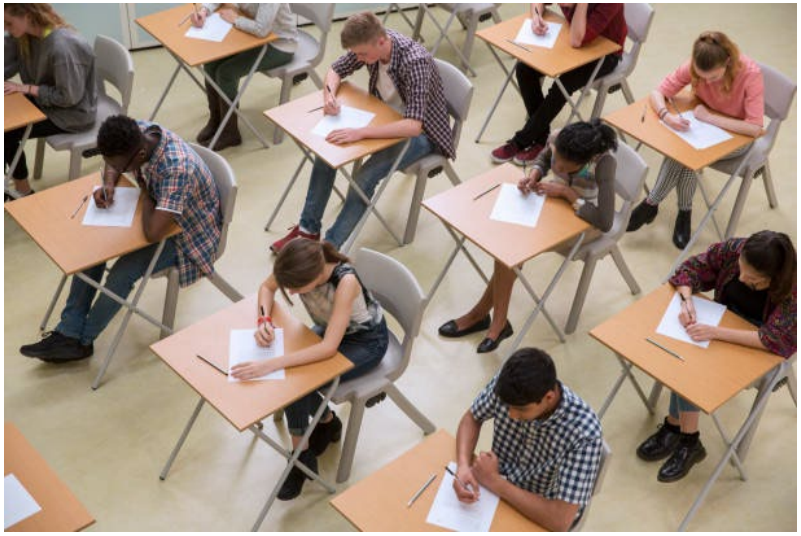
Independent Peer Review and Four-Eyes-Principle



Personal Requirements:

The persons to be recognized as Design Review Engineers are persons who

- **have completed their 35th year of life at the time of application.**
- **have successfully completed their studies of civil engineering at a technical university, college of higher education, or university of applied sciences requiring a regular period of study of at least 4 years before allowing final exams to be taken, or at an educational institution recognized as equivalent.**



- have gained appropriate practical experience at least during the last ten years prior to submitting the application.

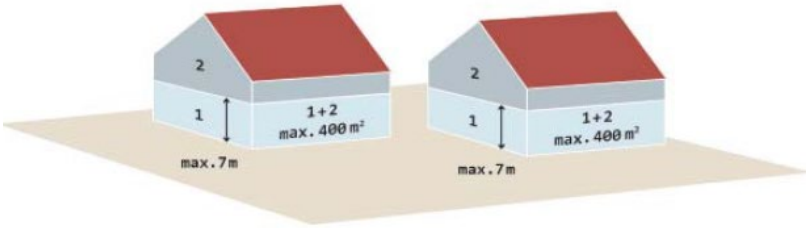
- have spoken and written command of the German language; and

- can, due to their personality, be relied upon to be equal to the tasks of a civil servant and to fulfil these tasks impartially and conscientiously.

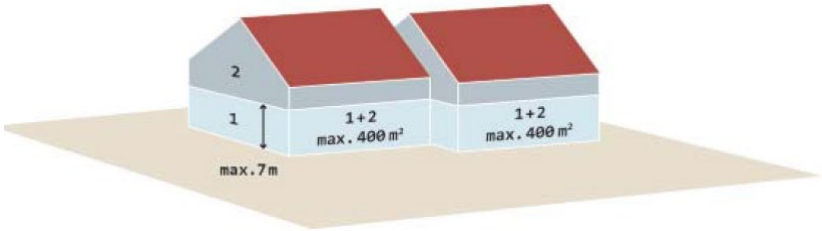
Whoever wishes to work as a Design Review Engineer for civil engineering in a particular field (solid construction, metal construction, timber construction etc.) shall present up to ten outstandingly difficult projects per subject field which they can prove to have worked on themselves in their professional lives to date.

Necessity of an independet Design Review depends on Building classes (1):

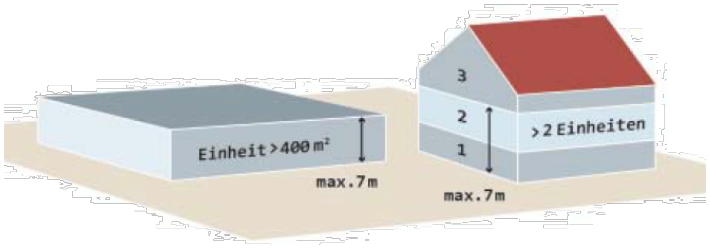
Building class 1
Free standing building structures with height up to 7 m and no more than two compartments/units of max. 400 m² and freestanding agricultural or forestry used buildings.



Building class 2
Buildings with up to 7 m height and no more than two compartments/units of max. 400 m²

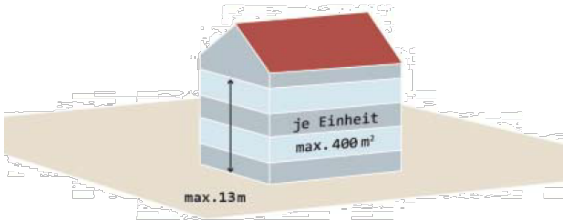


Building class 3
Other buildings up to 7 m height

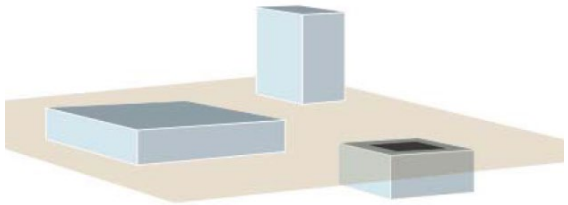


Necessity of an independet Design Review depends on Building classes (2):

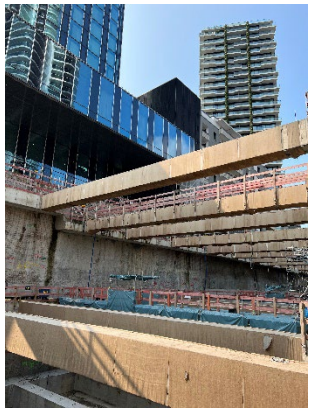
Building class 4
Buildings with height up to 13 m and compartments/units of no more than max. 400 m² each



Building class 5
Other buildings including subterranean building structures



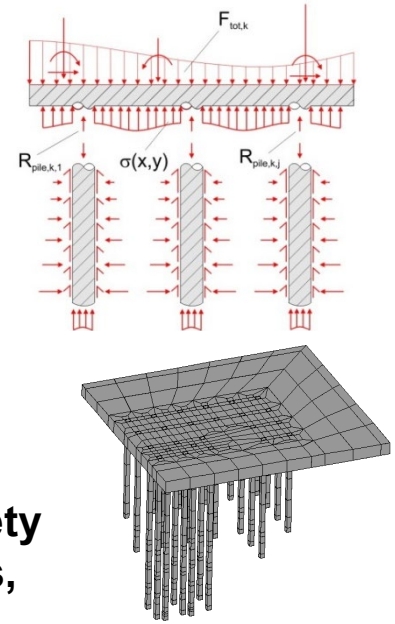
Independent Design Review by DER obligatory



Examples for the Peer Review according to Four-Eyes-Principle:

- during all planning stages
- during the whole construction period
- depending on the type of structure:

  Review of the long-term behaviour, controlling the long-term stability/safety (Bridges, Tunnels, Embankment Dams, Dikes etc.)



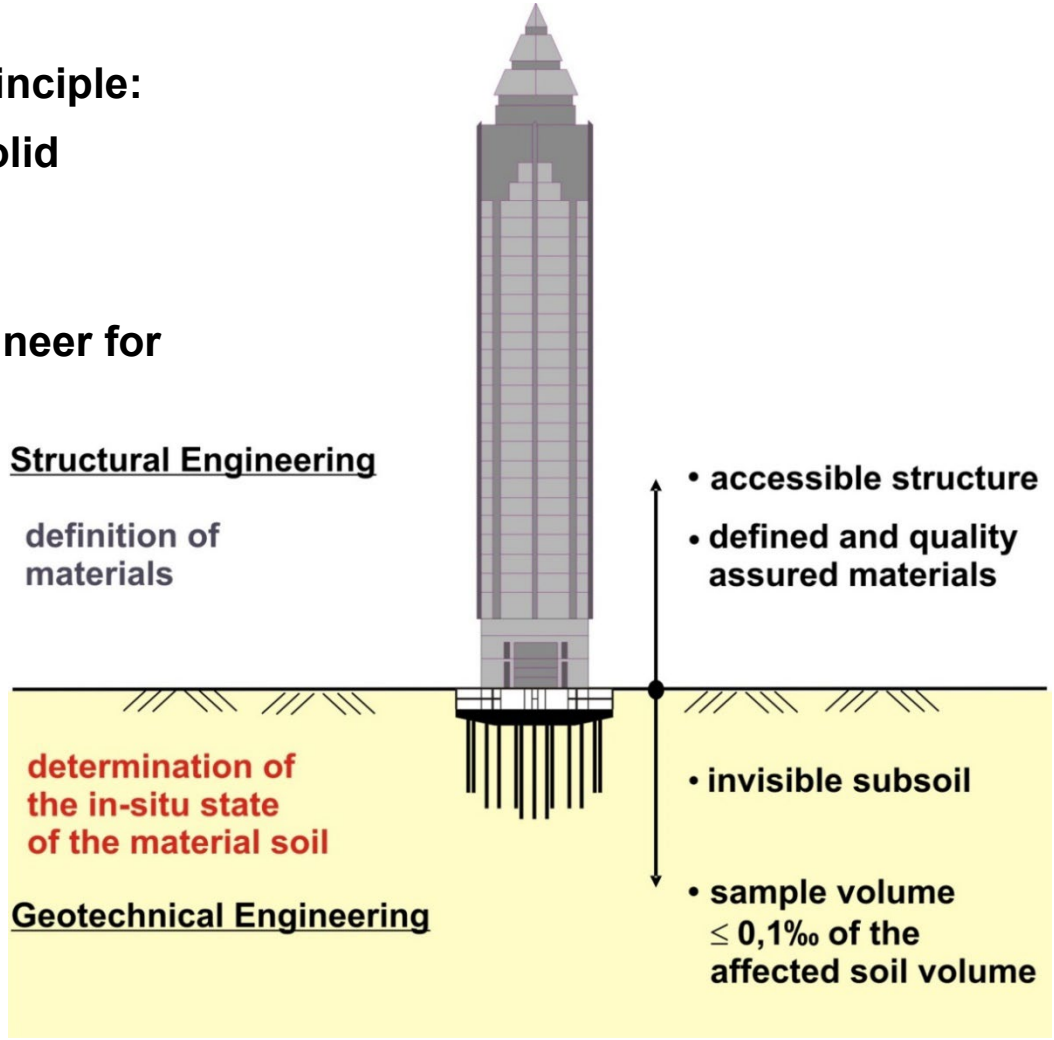
Special challenge: Soil-Structure-Interaction

Solution, regarding Four-Eyes-Principle:

- **Design Review Engineer for solid construction**

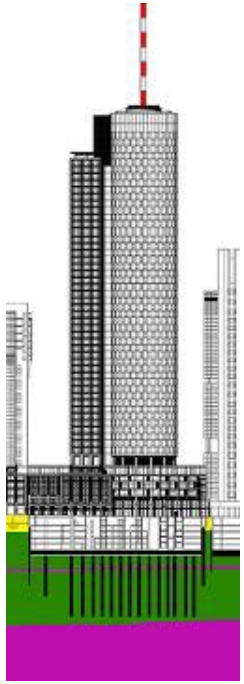
and

- **Chartered Design Review Engineer for Geotechnics**

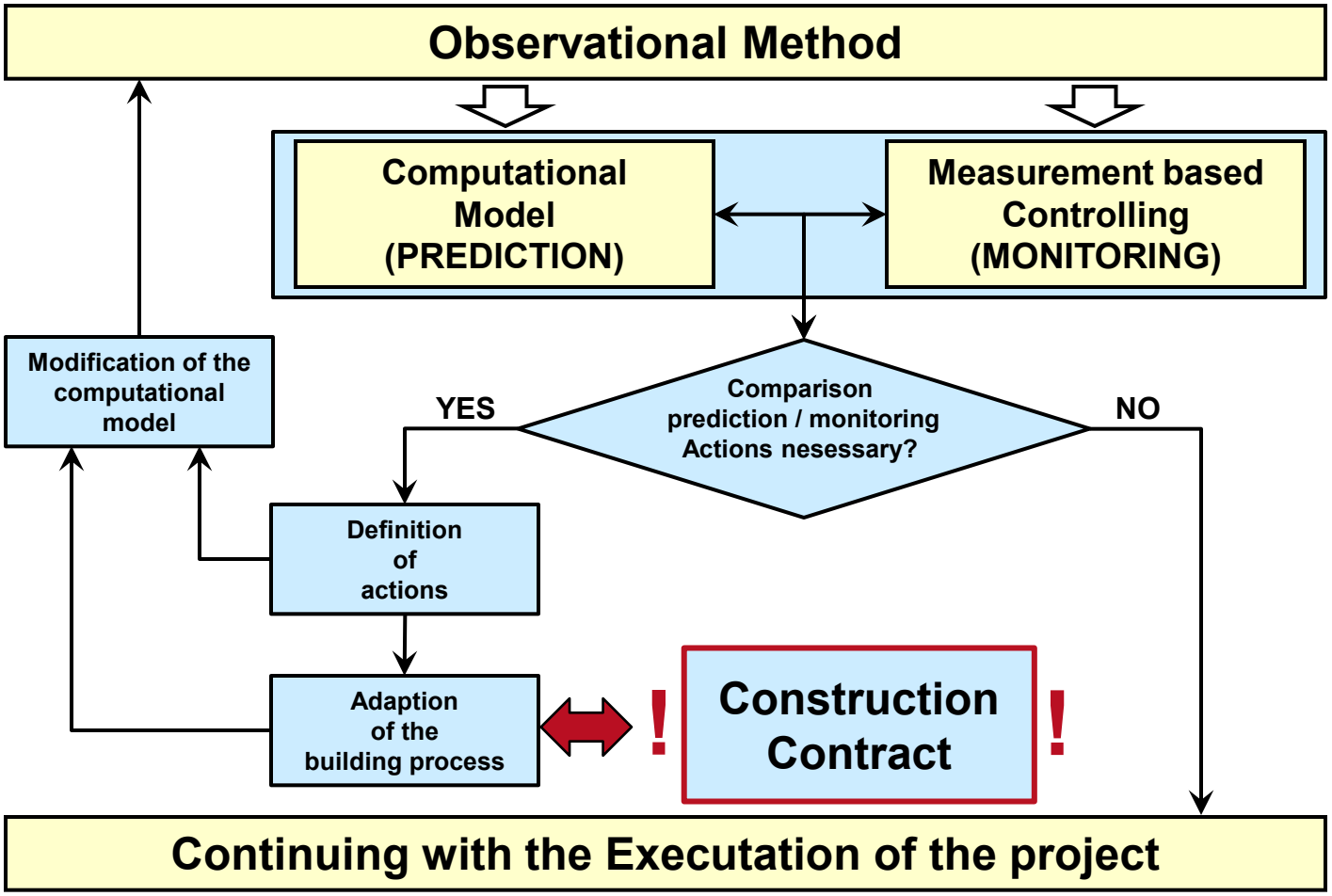


Geotechnical Category 3 (GC 3)

- Underpinning
- Deep excavations
- extended slab foundations on soil with varying stiffness ratios in the plan view
- foundations adjacent to existing buildings
- Foundations of high-rise buildings and bridges
- Combined Pile-Raft Foundation (CPRF)

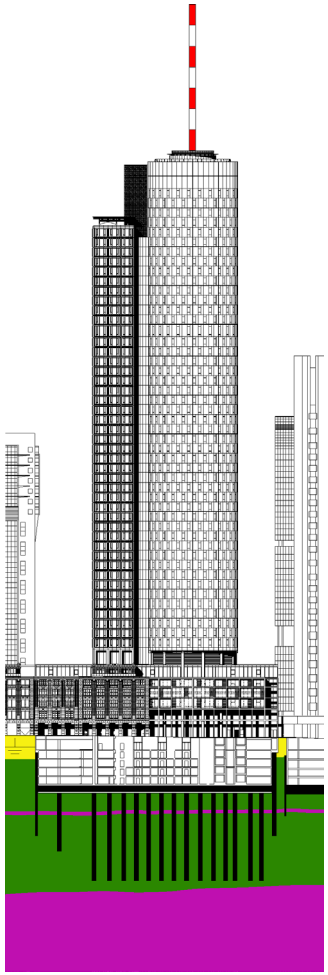


Construction projects in Geotechnical Category 3 should generally be inspected and approved in accordance with building regulations, following the Four-Eyes-Principle, involving a Chartered Design Review Engineer for Geotechnics.


Observational Method
Computational Model (PREDICTION)
Measurement based Controlling (MONITORING)
Comparison prediction / monitoring Actions nesessary?
YES
NO
Modification of the computational model
Definition of actions
Adaption of the building process
!
Construction Contract
!
Continuing with the Executation of the project

Own Peer Review activities (1)

Maintower, Frankfurt am Main



Kingdom Tower, now called Jeddah Tower

Own Peer Review activities (2)

Tunnelling close to the World Heritage Building Sagrada Familia in Barcelona / Spain:

Sagrada Familia

Quaternary

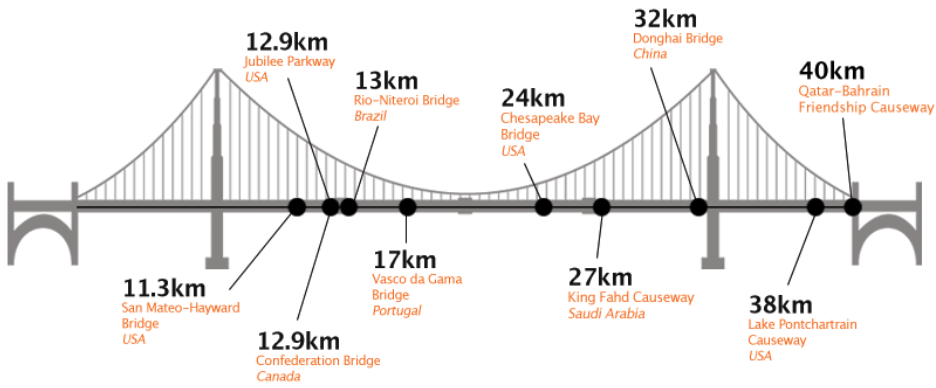
Transition zone

Tertiary

MENA INFRASTRUCTURE

The World's Longest Bridge

With construction starting on the Qatar-Bahrain Friendship Causeway, the world's longest bridge spanning a mass of water, we look at the top 10 longest bridges in the world.



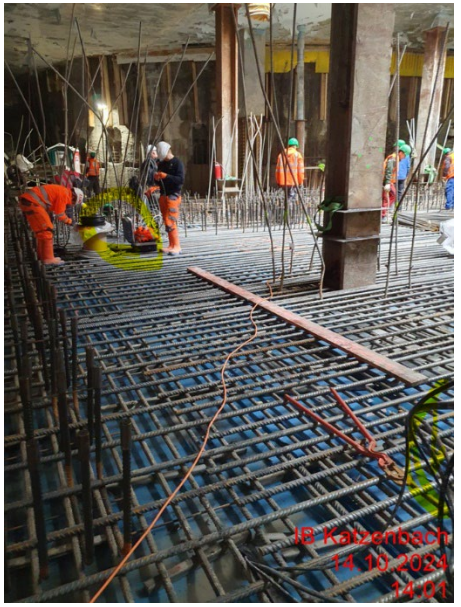
Qatar-Bahrain-Friendship Causeway, Middle East

Conclusions regarding the position, the role and the liability of the Design Review Engineer (1):

- **The Design Review Engineer is an absolutely independet expert, who works sovereignly on behalf of the Building Authority.**

- **The Design Review Engineer is an expert with an outstandig high knowledge and experience in the field of his expertise.**

- **To come on the list of Design Review Engineers, this candidate must be older than 35 years, he must have more than 10 years practical experience in the field of his expertise as responsible engineer and he must pass a very difficult written examination.**



Conclusions regarding the position, the role and the liability of the Design Review Engineer (2):

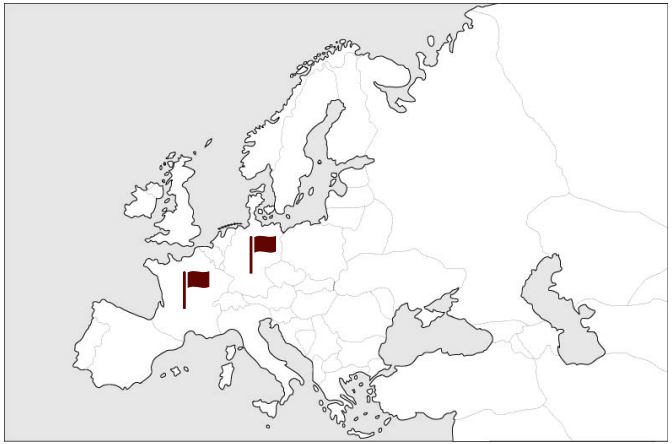
- The Design Review Engineer is only responsible towards the Building Authority, wih appointed him for the project; he is <u>not</u> responsible towards the investor/client.

- The Design Review Engineer is (mostly) payed by the Building Authority, which demands the costs from the investor/client.

- The Design Review Engineer is <u>not</u> liable for the design; the liability is on the side of the investor himself and/or on the side of the designers (architect, structural engineer, consultants etc.), which are assigned by the investor/client.

The Design Review Engineer is the guarantee for safety, serviceability and sustainability by consequent and sovereign application of the Four-Eyes-Principle.


Thank you
for
your kind attention!
www.katzenbach-ingenieure.de

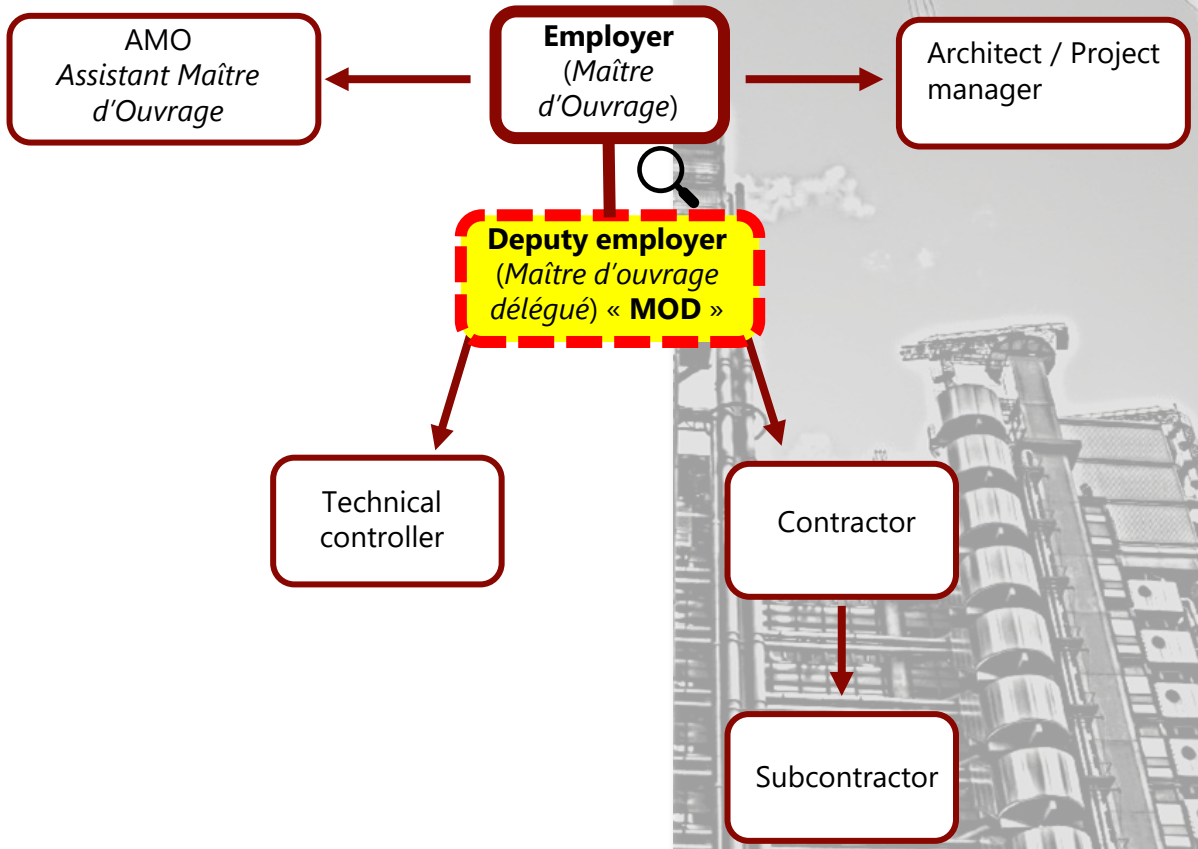


02

The design liability of the *Maître d'Ouvrage délégué (MOD)*

Edouard Vitry, FRICS
Avocat associé / Partner - Addleshaw Goddard (Paris)

Construction operators and MOD



Contract of mandate :

- *Intuitu personae*
- *Sui generis*
- Contract « *à la carte* »
- Missions must be defined with precision (*Civ 3e, 15 September 2010, n°09-13.442*)

Employer
(MO)

Deputy Employer
(MOD)

Challenges :

- **Variation in liabilities**
- **Variation in insurances to be subscribed**

I - MISSIONS

1. Representation

→Contract of mandate : MOD concludes legal acts in the name of the Employer

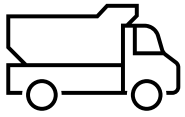
→To distinguish from the contract of AMO

→Obligation to report to the Employer on his missions

I - MISSIONS

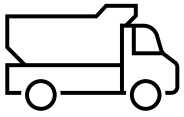
➢ **Before the start of the works, the MOD on behalf of the Employer:**

- Organises the tender as per the needs expressed by the Employer,
- Drafts the works contracts,
- Awards the tender to a contractor,
- Negotiates the works contract,
- Ensures that all the requirement of French law are met (collects insurance certificates, etc.).



I - MISSIONS

- **During the construction works, the MOD:**
  - Reports to the Employer on the status of the works,
  - Reports all of his diligences to the Employer (obligation to keep the Employer updated of the various acts signed in his name, the general progress of the project, the difficulties encountered etc.),
  - Participates to all steering committees / site meetings.
  - Ensure that all obligation assigned to the Employer under French law are being respected and performed



I - MISSIONS

2. Services

→Personalised, depends on the terms of the contract

→Risk of requalification : responsibilities exceed the contract of mandate, MOD considered a « *builder* », *CA Rennes 27 April 2017, n°13/09335*

→Direct consequences on liability and insurances

Gradation from simple representation to execution of works/services :

- Execution of works similar to the practice of other building operators
- Management of building operators
- Technical advising
- Representation of the MO in the conclusion of legal acts

Contract of services

Contract of mandate

II- LIABILITIES

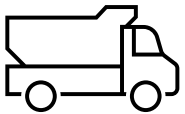
1. LEVEL 1 Contractual / tort liability

➢ Article 1991 French Civil Code - **Contractual liability of the MOD towards the Employer**

- Builder will seek damages from the Employer, who will hold the MOD liable under the contract of mandate if at fault (*Civ 3e, 2 October 2002, n°01-01.783*)

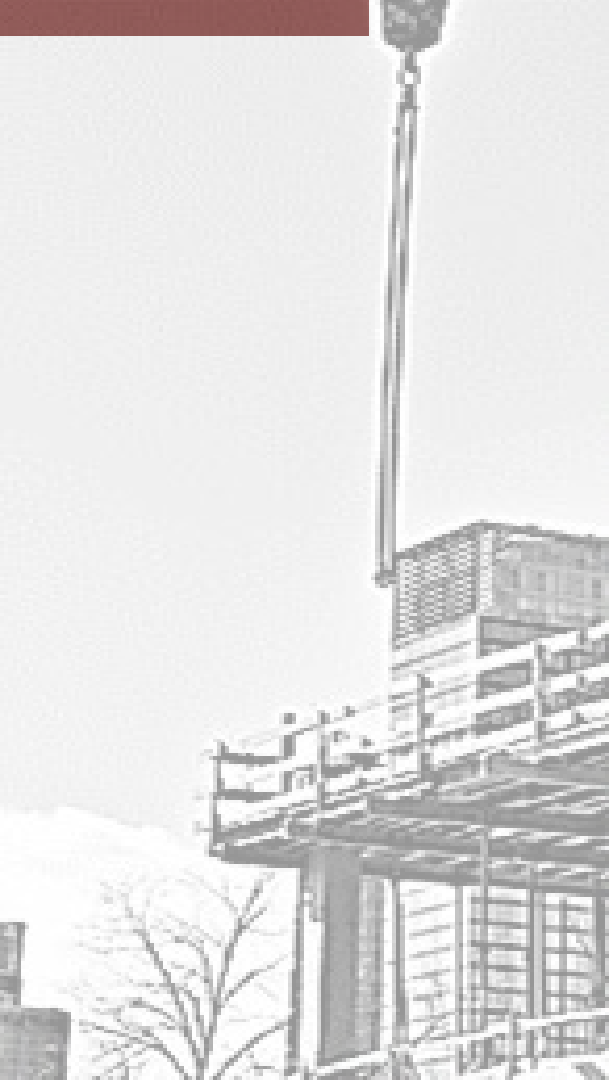
➢ Article 1240 French civil Code - **Liability in tort of the MOD towards third parties**

- MOD held liable for a tortious fault which does not imply the contract of mandate (*Civ 3e, 6 January 1999, n°96-18.690*)
- EXAMPLE : MOD cannot execute works which he/it has not received delegation for it.
  The builder who did not receive payment for such works can act for compensation in tort against the MOD with whom he/it has not concluded a contract.
  The Employer can hold the MOD liable under the contract of mandate (*Civ 3e, 21 September 2010, n°09-67.270*)



2. LEVEL 2 - Criminal liabilities

- Expressly stipulated in the contract of mandate
- Delegation of the Employer's criminal liabilities regarding specific regulations
- Environmental law, norms of hygiene, safety norms etc
- Sufficient delegation to justify correlative liabilities
- *Crim 12 September 2023, n°22-18.894 :* MOD held liable for not having transferred all necessary safety information



3. LEVEL 3 – Builders' liability

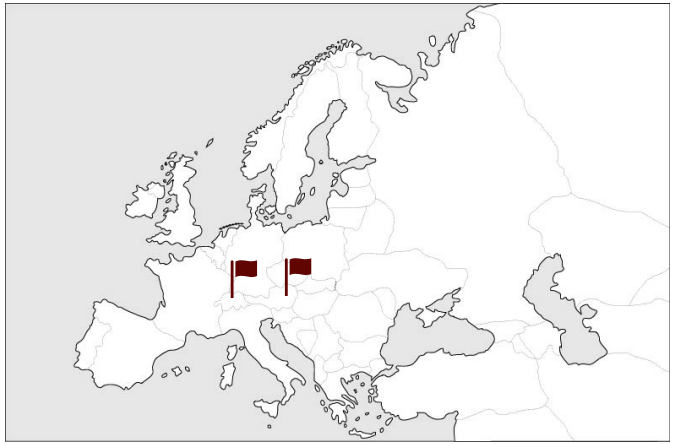
- Article 1792 French Civil Code
- Decennial liability of construction operators
- Follows risk of requalification : contract of mandate requalified as contract of services for the execution of works
- Must subscribe to a specific insurance to support costs of an eventual damage, *CA Caen 15 October 2013, n°11/01835*
- All necessary insurances must be subscribed beforehand

Drawing : François Cointe, « *Contrats : la maitrise d'ouvrage déléguée, une responsabilité encadrée* », Le Moniteur, 9 September 2020

To conclude :

- Contract of representation
- « *A la carte* »
- Define degree of involvement in execution of works
- Consequences in liabilities
- Consequences in insurances

Presentation by M. Edouard Vitry, Partner at Addleshaw Goddard (Europe) LLP



03

Construction standards define good, not best engineering practice

Elisabeth Sperlich – Daniel Gebhardt

Situation in Austria

Content

- Definition of standards
- Cycle of standardization
- Standards and State of the Art
- Legal nature of standards
- Construction law in Austria
- Political arguments

What is a standard?

ÖVE/ÖNORM EN 45020:2007:
3.2 standard
document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context
NOTE Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits.

- ✓ Consensus
- ✓ Consolidated results of science, technology and experience
- ✓ promotion of optimum community benefits

ÖVE/ÖNORM
EN 45020
Ausgabe: 2007-02-01

Normung und damit zusammenhängende Tätigkeiten — Allgemeine Begriffe
(ISO/IEC Guide 2:2004)
(mehrsprachige Fassung: de/en/fr)

Standardization and related activities – General vocabulary (ISO/IEC Guide 2:2004)
(multilingual version: de/en/fr)

Normalisation et activités connexes – Vocabulaire général (ISO/IEC Guide 2:2004)
(version multilingue: de/en/fr)

Who develops standards

Austrian Standards International (Status: 31 December 2023):

4,700 participants from 2,828 nominating organizations

- SME 44.1 %
- Big enterprises 25.2 %
- Federal, provincial and municipal authorities 11.1 %
- Universities, schools, research 8.7 %
- Testing, certification and accreditation bodies 8.5 %
- Consumers, professional organizations 1.7 %
- NGOs (environment, etc.) 0.7 %

Cycle of standardization

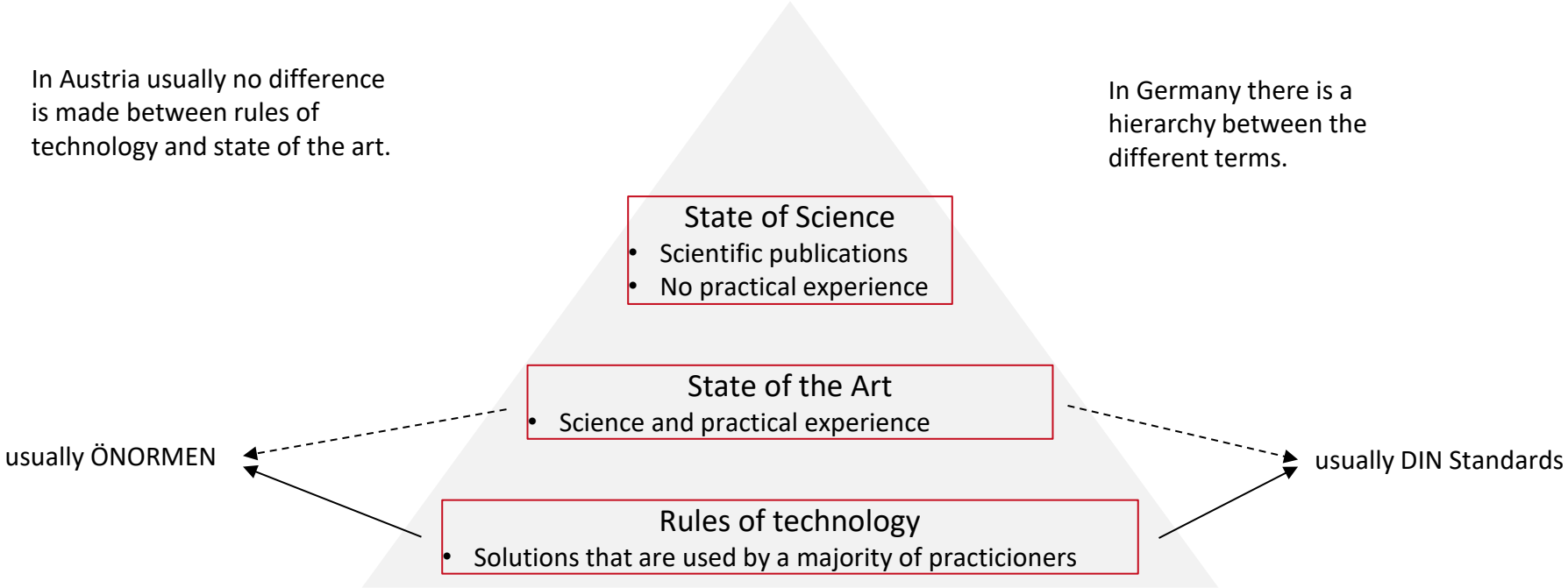
Beginning of the project	Idea of one person/one interest group
Work in committees	Many participants with different expertise
Draft standard	All interests are taken into account
Comments of the public	More different views arrive
Finalisation	All views put together
Experience with the standard	Input from appliers of standards
Review of the standard	Need for revision

=> The best practice will be diluted during the process in order to fit all needs => good practice

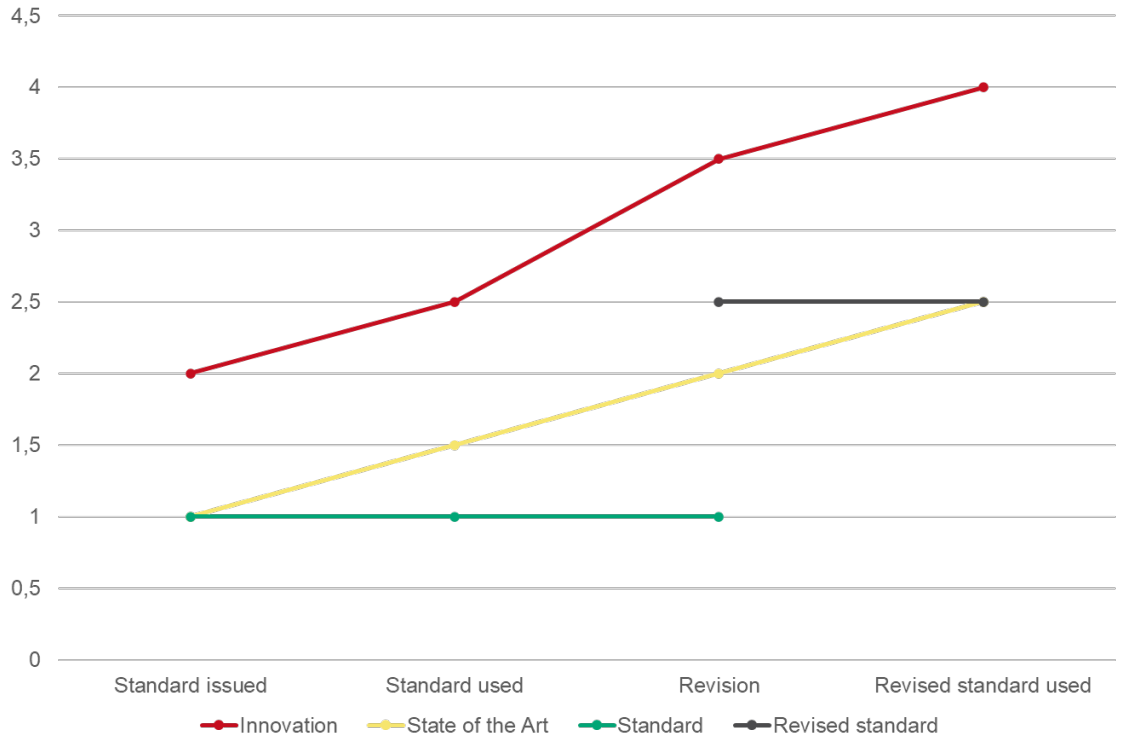
Standards and State of the Art

In Austria usually no difference is made between rules of technology and state of the art.

In Germany there is a hierarchy between the different terms.



Standards, Innovation and State of the Art



Standards and State of the Art

ÖNORMEN are usually considered as acknowledged rules of technology.

Definition:
ÖVE/ÖNORM EN 45020:2007:
1.5 acknowledged rule of technology
technical provision acknowledged by a majority of representative experts as reflecting the state of the art
NOTE A normative document on a technical subject, if prepared with the cooperation of concerned interests by consultation and consensus procedures, is presumed to constitute an acknowledged rule of technology at the time of its approval.

The state of the art is an undefined legal term. ÖNORMEN are often considered as reflecting the state of the art.

Definition:
ÖVE/ÖNORM EN 45020:2007:
1.4 state of the art
developed stage of technical capability at a given time as regards products, processes and services, based on the relevant consolidated findings of science, technology and experience

Legal Nature of Standards

Standards are usually not binding.

They can become binding if
- the lawmaker decides so by referring to them (binding on everyone) or
- they are part of a treaty (binding on parties).

They can also have legal effects through other ways:
- Common Practice
- Duties to maintain safety
- Presumption of conformity (harmonized European standards)

Standards and Common Practice

Compensation for damages and warranty:
If a damage occurs because of an unsafe product or if a product does not meet the agreed conditions the Austrian high court takes the following steps to assess the claim:

Wording of the treaty

↓

“True will” of the parties

↓

Common practice

↓

State of the art ~ ÖNORM

⇒ Common practice cannot be something highly sophisticated.
⇒ Standards define good practice.

Source: https://media.aroundhome.de/image/upload/f_auto/q_auto/w_1440,c_fit/Editorial/CMS/98881-teaser-trittschalldaemmung, accessed on 2024-10-01

Standards and Duties to Maintain Safety

According to law, operators of a source of danger must take sufficient measures to minimize damage of people and goods that might be caused by the source of danger.

This implies that those sources of danger – e.g. buildings – must be maintained according to the state of the art. Therefore, even old buildings must be adapted to current state of the art if this is (also economically) feasible. The state of the art is often defined by standards.

⇒ Buildings do not have to be adapted to the highest available technical achievements.
⇒ They must be safe.
⇒ Standards define the good practice.

Construction law in Austria

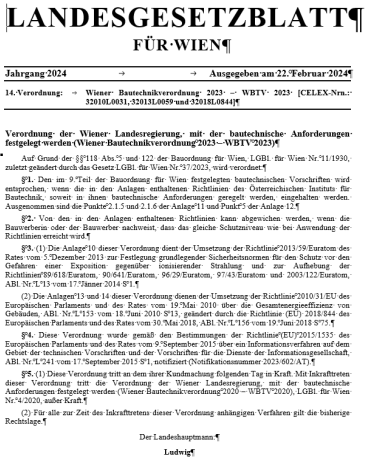
- 9 different construction laws in Austria (federal state with 9 countries)
- OIB-RL: Guidance documents of the Austrian Institute of Construction Engineering
  - Institute consists of all 9 countries
  - they negotiate common guidelines to harmonize the construction engineering regulations in Austria.

Example of Vienna:

- Law on construction: Part 9 defines construction engineering regulations and lays down basic requirements for construction works which have to be fulfilled according to the **state of the art**.
- Regulation on construction engineering: The construction engineering regulations of Part 9 of the law are fulfilled if the OIB-RL are respected.
- OIB-RL contain references to ÖNORMEN.

⇒ Those ÖNORMEN are state of the art.

⇒ They define good practice.



LANDESGESETZBLATT FÜR WIEN

Jahrgang 2024 → → Ausgegeben am 22. Februar 2024

14. Verordnung: → Wiener Bautechnikverordnung 2023 – WBTV 2023 [CELEX-Nrn.: 32010L0031, 32013L0059 und 32018L0844]

Verordnung der Wiener Landesregierung, mit der bautechnische Anforderungen festgelegt werden (Wiener Bautechnikverordnung 2023 – WBTV 2023)

Auf Grund der §§ 118 Abs 5 und 122 der Bauordnung für Wien, LGBl. für Wien Nr. 11/1930, zuletzt geändert durch das Gesetz LGBl. für Wien Nr. 57/2023, wird verordnet:

§ 1. Den im 9. Teil der Bauordnung für Wien festgelegten bautechnischen Vorschriften wird entsprochen, wenn die in den Anlagen enthaltenen Richtlinien des Österreichischen Instituts für Bautechnik, soweit in ihnen bautechnische Anforderungen geregelt werden, eingehalten werden. Ausgenommen sind die Punkte 2.1.5 und 2.1.6 der Anlage 11 und Punkt 5 der Anlage 12.

§ 2. Von den in den Anlagen enthaltenen Richtlinien kann abgewichen werden, wenn die Bauwerberin oder der Bauwerber nachweist, dass das gleiche Schutzniveau wie bei Anwendung der Richtlinien erreicht wird.

§ 3. (1) Die Anlage 10 dieser Verordnung dient der Umsetzung der Richtlinie 2013/59/Euratom des Rates vom 5. Dezember 2013 zur Festlegung grundlegender Sicherheitsnormen für den Schutz vor den Gefahren einer Exposition gegenüber ionisierender Strahlung und zur Aufhebung der Richtlinien 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom und 2003/122/Euratom, ABl. Nr. L 13 vom 17. Jänner 2014, S. 1.

(2) Die Anlagen 13 und 14 dieser Verordnung dienen der Umsetzung der Richtlinie 2010/31/EU des Europäischen Parlaments und des Rates vom 19. Mai 2010 über die Gesamtenergieeffizienz von Gebäuden, ABl. Nr. L 153 vom 18. Juni 2010, S. 13, geändert durch die Richtlinie (EU) 2018/844 des Europäischen Parlaments und des Rates vom 30. Mai 2018, ABl. Nr. L 156 vom 19. Juni 2018, S. 75.

§ 4. Diese Verordnung wurde gemäß den Bestimmungen der Richtlinie (EU) 2015/1535 des Europäischen Parlaments und des Rates vom 9. September 2015 über ein Informationsverfahren auf dem Gebiet der technischen Vorschriften und der Vorschriften für die Dienste der Informationsgesellschaft, ABl. Nr. L 241 vom 17. September 2015, S. 1, notifiziert (Notifikationsnummer 2023/602/A/T).

§ 5. (1) Diese Verordnung tritt an dem ihrer Kundmachung folgenden Tag in Kraft. Mit Inkrafttreten dieser Verordnung tritt die Verordnung der Wiener Landesregierung, mit der bautechnische Anforderungen festgelegt werden (Wiener Bautechnikverordnung 2020 – WBTV 2020), LGBl. für Wien Nr. 4/2020, außer Kraft.

(2) Für alle zur Zeit des Inkrafttretens dieser Verordnung anhängigen Verfahren gilt die bisherige Rechtslage.

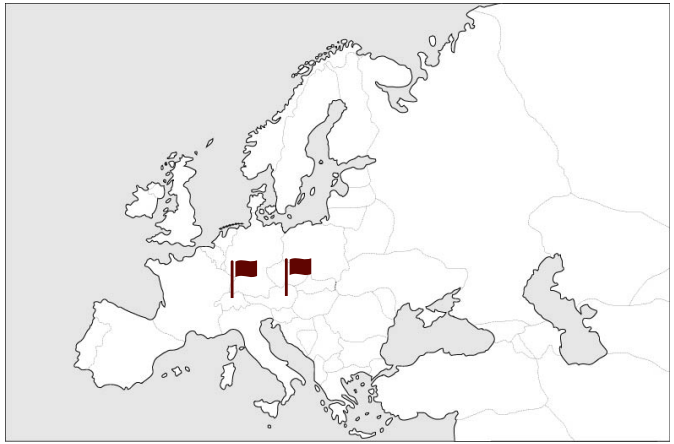
Der Landeshauptmann

Ludwig

Political arguments

- Construction standards are often criticized as being too cumbersome.
- Discussions ongoing if construction standards render housing too expensive.
- Political pressure not to go for the most sophisticated methods.

- As standards only define good not best engineering practice, they are still applied by all parties involved in construction.



03

Construction standards define good, not best engineering practice

Elisabeth Sperlich – Daniel Gebhardt

Construction standards define good, not best engineering practice

The situation in Switzerland

Daniel Gebhardt

NEOVIUS

Content

- Types of Standards
- References
- The Swiss benchmark: SIA Standards
- Technical Norms and their effects
- Closing remarks

Types of Standards: Overview

1. **Legal Norms (Gesetze und Verordnungen)**
   - Governmental and static general legal regulations
   - Issued through democratic procedures by the appropriate authority
   - Often require significant interpretation
2. **Execution Aids (Vollzugshilfen)**
   - Issued by governmental or private oversight bodies
   - Clarify legal norms without binding authority
   - Developed by experts, often without client approval
3. **Technical Norms**
   - Published by private standard-setting organizations
   - Established through consensus of all stakeholders
   - Regularly updated (e.g., SIA norms by the Swiss Society of Engineers and Architects)
4. **De Facto Standards**
   - Developed by industry associations within the issuing organization
   - Not legally binding but aimed at quality assurance and strengthening the industry.

References to and within Standards I

1. **Interconnected Standards**
   - Standards reference each other across types (e.g. legal norms referencing technical standards)
2. **Direct vs. Indirect References**
   - Direct: Specific mention of a standard
   - Indirect: Undefined legal terms requiring interpretation by "state of the art“
3. **Rigid vs. Dynamic References**
   - Rigid: Fixed to a specific version
   - Dynamic: Always refers to the most current version

Example: Noise Abatement Ordinance

Art. 32 Requirements

*[1] The project owner of a new building shall ensure that the soundproofing of the external building elements and partitions of rooms sensitive to noise […] complies with **recognised codes of building practice**. These are in particular […] the minimum requirements, of **SIA Standard No 181 of the Swiss Society of Engineers and Architects**.*

References to and within Standards II

Consequences

- Open and undefined legal standards
- Reduced legal certainty
- Concretisation by private organisations and legislature
- Potential risks of undermining democratic legitimacy and transparency

Compatibility with the rule of law:

Constitutional admissibility of dynamic references (BGE 136 I 316)

- Unimportant norms may be delegated to private organizations
- Technical Standards = Unimportant Norms = Delegation permitted
- Despite potential impacts beyond private law

Swiss society of engineers and architects (SIA)

sia
schweizerischer ingenieur- und architektenverein
société suisse des ingénieurs et des architectes
società svizzera degli ingegneri e degli architetti
swiss society of engineers and architects

1. **Private Organization**
   - Private organization for standardization in building construction
   - Sets norms, regulations, guidelines and recommendations

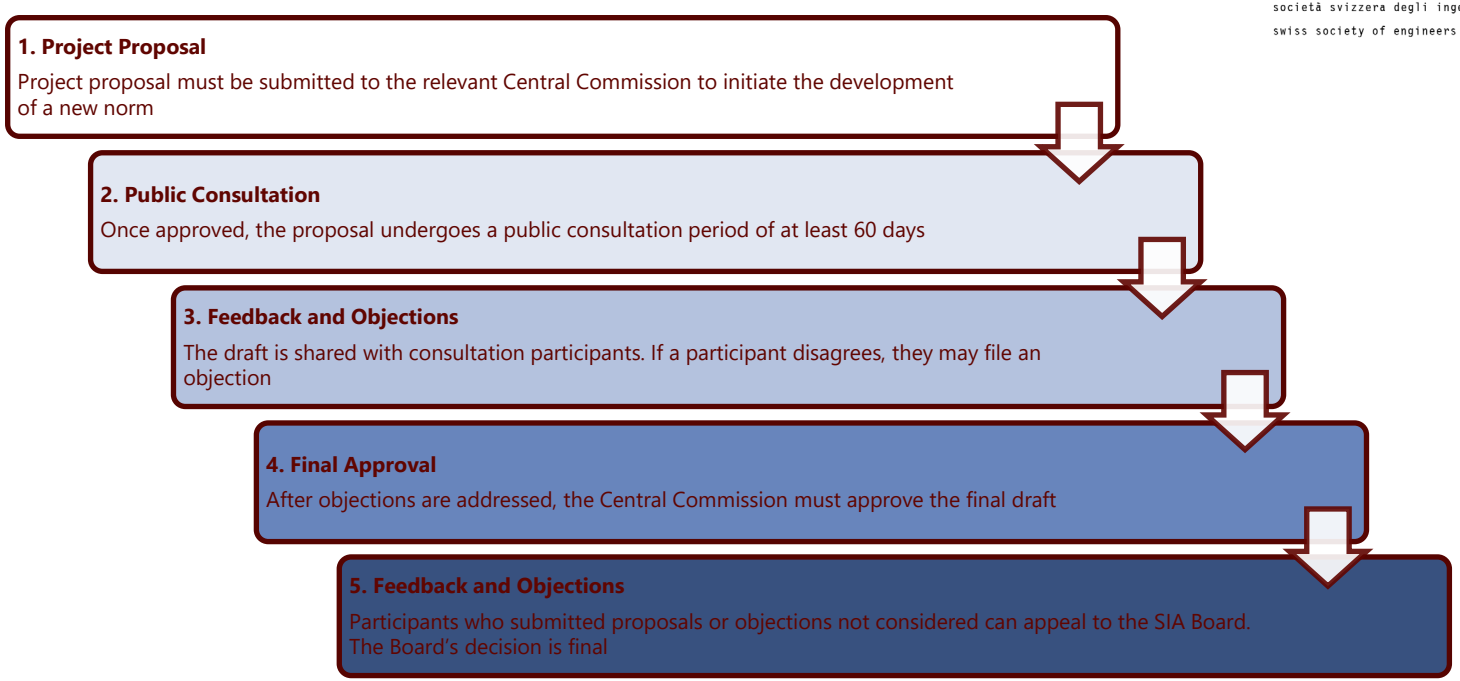
2. **Comprehensive Standards**
   - Technical norms: Rules of construction science, defining requirements for building materials and components (e.g. SIA Norm 181 Sound insulation in buildings)
   - Contractual norms: General conditions for construction contracts (e.g. SIA Norm 118)
   - Norms of understanding: Definitions to simplify coordination and communication.

3. **Structure of the SIA**
   - Central Commission for Standards: Coordinates the development of norms and approves national standards.
   - Sectoral Norms Commissions: Oversee specific technical areas and manage working groups.
   - Norms Commissions: Create standards within specialized fields.

4. **Access to Norms: Limited paid access**
   - Copyrights vs. free access
   - Particularly controversial due to the references

Process for Developing SIA Standards

sia
schweizerischer ingenieur- und architektenverein
société suisse des ingénieurs et des architectes
società svizzera degli ingegneri e degli architetti
swiss society of engineers and architects



Periodic Review in a Five-Year Cycle:

SIA reviews its standards every five years to ensure alignment with legal, technical, and societal changes.

Swiss Institute for Glass in Construction (SIGAB)

SIGAB
Technische Fachstelle
Département technique
Dipartimento tecnico

1. **Private Organization**
   - Issues technical guidelines, provides expert reports
   - Affiliated with the Swiss Flat Glass Association (SFV) since 2023

2. **Criticism**
   - SFV represents the flat glass industry nationwide
   - Many senior employees of SIGAB also hold leadership roles in the SFV
   - Unlike SIA standards, SIGAB does not clearly indicate which stakeholders are involved
   - Relies solely on its own technical commission, unlike the SIA's more inclusive approach
   - Doubts about stakeholder consensus

3. **Example: Anti-Shard Guideline (SIGAB)**
   - Questions raised about whether the guideline serves safety or economic interests
   - Causes confusion in the construction industry regarding its practical implications
   - Could be used as a reference in legal cases for safety, but its is uncertain compared to well-established norms like those of the SIA

Technical Norms I

1. **Different definitions**
   - Construction Products Act: «*a technical specification for repeated or continuous use that has been adopted by a national or international standardisation body*»
   - Act on technical barriers to trade: *«non-legally binding rules or characteristics established by a standard-setting organisation [...]»*
   - Similar BGH: *«DIN standards are not legal standards, but private technical regulations with the character of recommendations»*

2. **What happens if a rule is considered a recognized rule of technology?**
   - Rule must be followed
   - Failure to follow these rules is considered negligent

3. **What makes a rule a recognized rule of technology?**
   - Accepted by the scientific community as theoretically correct
   - Proven effective through practical application
   - Private technical norms can achieve this status if widely accepted
   - Court Practice: Rebuttable presumption that technical norms reflect the recognized rules of technology

Technical Norms II

1. **How is the presumption rebutted?**
   - Labeled as technical recommendation (lack of practical proof)
   - Outdated since time of publication
   - Revision draft may reflect better current standards

2. **Example: Deviation from the rules of technology – SIA 262 Concrete construction**

   0.4 Deviations (translated)
   0.4.1 Deviations from this standard are permitted if they are sufficiently justified by ***theory or tests*** *or if new developments and findings justify them (SIA 262).*

   - Generally: Scientific recognition that has proven itself in a majority opinion
   - New: Deviation justified by theory and test
   - **= No recognition in the relevant professional circles required**

Impact: Contract law and criminal law

1. **Contract Law and Criminal Law**
   - Planning must follow generally accepted recognized rules of technology; even if technical standards are in the contract
   - Current standards at the time of project execution take precedence over outdated contractual norms
   - Swiss society of engineers and architects (SIA) norms as recognized rule of technology
   - Technical norms can influence criminal negligence cases

2. **Criminal Court Zurich: Negligent serious bodily injury due to violation of technical norms**
   Court reviewed regulations on accident and SIA norms (SIA 118 and 465)

→ Expert report confirmed violations of legal norms and technical norms (SIA standards)
→ Found guilty of negligent serious bodily injury

Closing Remarks I

1. **Technical Norms**
   - Are not the definitive and only possible solutions
   - Result of compromises between different interests
   - Do not always reflect "best engineering practice”

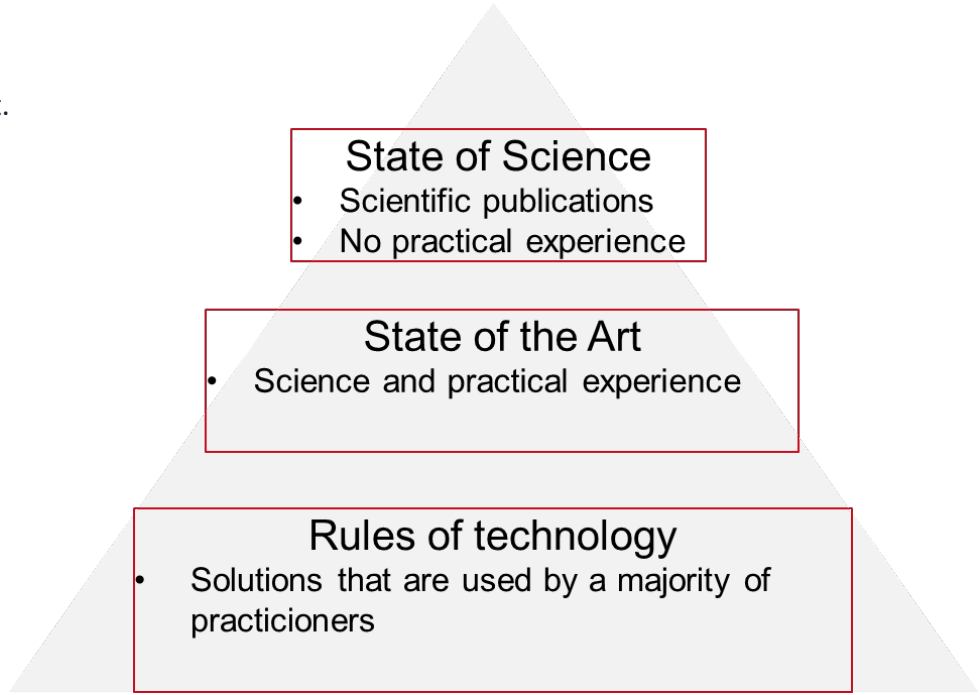
2. **Simplification of Reality**
   - Simplifies complex realities
   - Minimum requirements, not best practice

3. **Impact of References**
   - References may not reflect technical advancements
   - Can create gaps between current standards and best practice

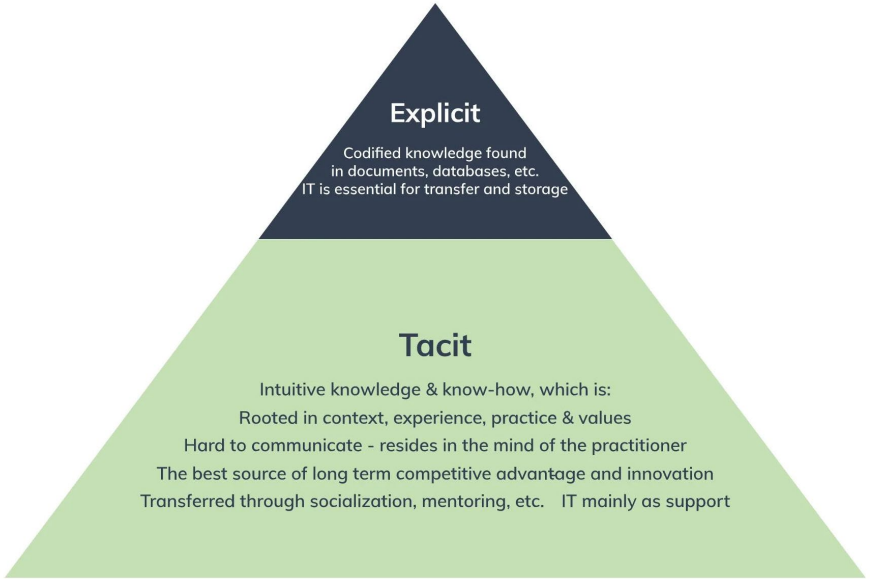
4. **Critical Evaluation Necessary**
   - Compliance with technical norms required
   - Critical assessment of norms necessary
   - Norms ≠ Best Practice

Closing remarks II

As in Austria in Switzerland usually
no difference is made between
rules of technology and state of the art.



Closing remarks III



Thank you for your attention!

NEOVIUS

ADVOKATEN & NOTARE

04

The position of the (authorities' appointed) design certifier in Romania

Răzvan Ruginã - *Romanian Society of Construction Law*

Romanian “Construction Quality System”

Among the activities included in the “construction quality system”, there are comprised:

- Verification and technical expertise of design;
- Technical-professional certification and authorization of design certifiers;
- Certification of the technical-professional qualification of the companies who provide design and/or consultancy services in constructions; and
- Continuous professional development of design certifiers and other specialists working in construction field .

Actors of “Construction Quality System”

The main actors of the Romanian “Construction Quality System” implied in verification of the design and compliance of construction works are:

- **Design certifier** - authorized to verify the design in terms of compliance with the technical regulations and the applicable fundamental requirements provided by law;

- **Technical expert** - authorized to determine by tests, surveys, analyses and evaluations, the technical condition of an existing or unfinished construction, the way in which the construction works have been executed or the way in which a project complies with the technical regulations in order to ensure the applicable fundamental requirements provided by law;

Actors of “Construction Quality System”

- **Technical execution manager** (“RTE”) - in his/her capacity as employee of the contractor that performs the construction works, the technical execution manager ensures the quality of the performance of construction works that he/she coordinates, from a technical point of view, throughout the process;

- **Site manager** (“Diriginte de șantier”) - has the same responsibilities as those of the technical execution manager, but in his/her capacity as employee of the employer;

- Starting with 2020, into the “Construction Quality System” was also included the companies that provide public authorities with consultancy or technical assistance (*i.e.* the **FIDIC Engineers / G.D. 1/2018 Supervisors**).

Conditions to become a Design Certifier

According to the law, natural persons who essentially meet the following conditions can apply for certification/authorization as design certifiers by the competent authority:

- They are Romanian citizens, citizens of another member state of the European Union, of the European Economic Area or of the Swiss Confederation;
- They prove the graduation of bachelor's degree, being the holder of a diploma of **engineer or architect**;
- They must prove that they have a **minimum professional experience of at least 8 years**, of which at least 3 years in design activities.

Confirmation of the right to practice

The right to practice of design certifiers is granted for an indefinite period of time and is confirmed periodically, **every 5 years**, by verifying the fulfilment of the initial certification/authorization requirements by the competent authority .

For the periodic confirmation of their right to practice, the design certifiers must prove:

- That they have attended **at least one continuous professional training/improvement program** in the field for which they are certified/authorized, or

- **That they have taught courses** as a university teacher corresponding to the fields for which proof of continuous professional training is required.

Design Certifiers' Duties

According to the fields and/or subfields of construction for which he/she has been certified/authorized, the design certifiers perform the following duties:

- **Verifies the technical documentation** for obtaining the approvals/endorsements required by the urban planning certificate;

- **Verifies the design** elaborated for authorizing the performance of works, the technical design, and the related documents which include, but are not limited to, the general technical memorandum, calculation breviary, specifications, technical instructions for performance and/or operation, the quality control program for the performance of construction works and the drawn parts, as the case may be;

Design Certifiers' Duties (II)

- **Verifies the technical documents** drawn up by the designer during the execution of the works with the prior written consent of employer;
- **Prepares, respectively signs and stamps the project verification report** which includes, among other things, data and information regarding the compliance with the technical regulations and applicable fundamental requirements;
- **Verifies the concordance** between the technical solution described in the technical memories by specialties, the execution technology proposed for the achievement of the investment objective and the corresponding specifications;
- **Signs and stamps the verified documentation**, if they are appropriate from the point of view of the requirements established by law.

Prohibitions and Incompatibilities

Pursuant to the law, the design certifier:

- Carries out the verification of a technical documentation/design **only for the fields and/or subfields of construction for which it has been certified/authorized** by the competent authority; and

- **May not verify, sign and stamp a design drawn up by himself/herself**, a design in the elaboration of which he/she has participated, or the designs for which, as a certified/authorized technical expert, he/she has prepared the technical expertise report.

Liability of the Design Certifier

- Is jointly and severally liable with the designer for the quality of construction works (**in public works** it will be jointly and severally liable **with the designer and the FIDIC Engineer / GD 1/2018 Supervisor** for the quality of construction works);

- Is jointly and severally liable with the designer, the manufacturers and suppliers of construction materials and products, the contractor, the authorized technical execution manager, the authorized site manager, the certified technical expert for the hidden defects of the construction, arising within a period of **10 years from the taking over of works**, **as well as** after the expiry of this term, **throughout the duration of the construction's existence**, for the defects of the resistance structure resulting from non-compliance with the design and performance standards in force at the date of its construction.

Criminal Liability of Design Certifier

- Certifying a project without complying with the technical regulations on stability and resistance, if in this way the life or physical integrity of one or more persons is endangered, constitutes a criminal offence and is punishable by **imprisonment from one year to 5 years** and the prohibition of some rights.

- If the aforementioned act has produced one or more of the following consequences: loss of human life, serious injury to the physical integrity or health of one or more persons, total or partial destruction of the building, destruction or degradation of important installations or equipment or other particularly serious consequences, it constitutes a criminal offence and is punishable by **imprisonment from 3 to 10 years** and the prohibition of certain rights.

Administrative Liability of Design Certifier

- Appropriation by the authorized design certifiers of incomplete designs, which present non-compliant solutions or which contain inconsistencies between their different sections, which lead to the failure to achieve the level of quality of the constructions corresponding to the applicable fundamental requirements is sanctioned with a **fine from 1.000 Lei to 100.000 Lei (*i.e.* approx. from 200 Euros to 20,094 Euros)**;

- Exceeding by authorized design certifiers of their competences on fields, subfields, specialties or professional grades for which they are certified/authorized, exercising the right to practice outside the validity period and/or failing to fulfil their obligations according to the laws in force, are sanctioned with a **fine from 10.000 Lei to 20.000 Lei (*i.e.* approx. from 2,010 Euros to 4,020 Euros).**

Thank you!

Av. Dr. Răzvan Rugină

Construction & Infrastructure Lawyer
President of the Romanian Society of Construction Law

04

The position of the (authorities' appointed) design certifier in Romania

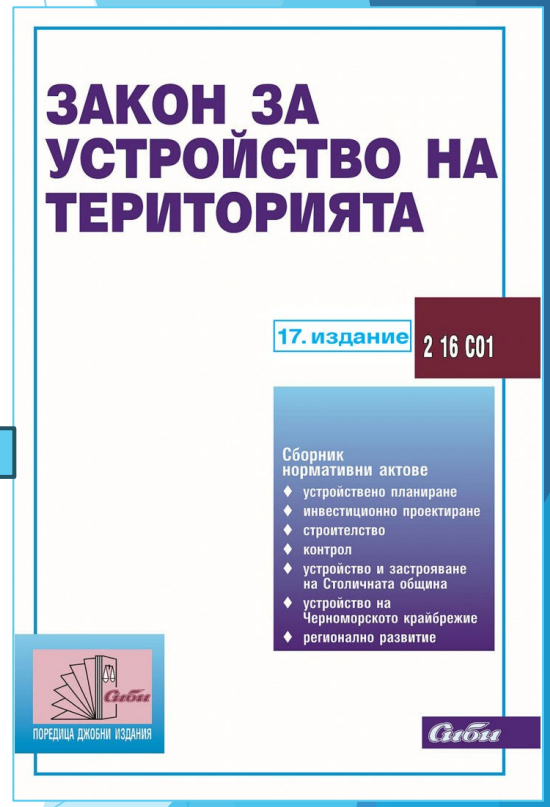
Adriana Spassova - *Bulgarian Society of Construction Law*

Bulgaria

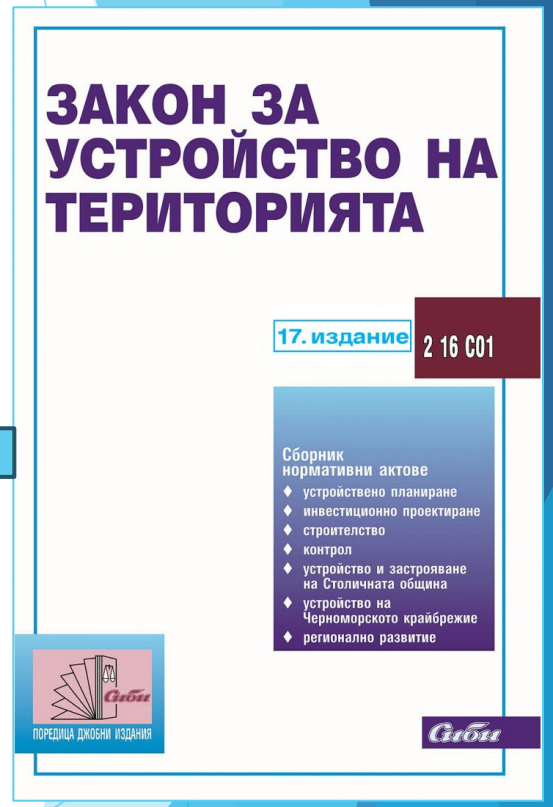
The position of the design certifier

Dr. Eng. Adriana Spassova
Partner EQE Control OOD
BSCL Board Member

- The design approval and building control codification is provided by section 8 of the ***Spatial Development Act (SDA)***
- According to their characteristics, importance, complexity and operational risks, construction works are divided in **6 categories**
- No design approval is required for permitting Category VI works.
- The minimum design scope for a building permit is the same for Categories I÷V according to ***Ordinance No. 4 for the Minimum Scope and the Contents of the Design*** (2001).
- A building permit is issued on the grounds of the approved technical or detailed design, based on a **Compliance assessment report, issued by the registered design certifier.**
- A building permit may be issued following the approval of the basic design, but the **technical or detailed design has to be approved before implementation**.



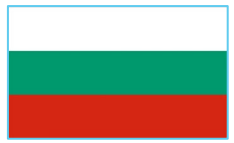
- The SDA lays down the roles of the participants in construction.
- In 1999 the State transferred some of its duties for building control to private sector consulting companies, which were licensed and later registered by the Government.
- The employer must sign a contract with a **registered consultant** for the supervision of **all projects which are high and medium risk**, as defined by the SDA.
- The consultant is a participant in the construction process, responsible for ensuring **design and construction compliance** with the regulations in force.
- The consultant shall be **a trader** in the sense of the Commerce Act or registered in an EU Member State or in another state – a party to the Agreement on the European Economic Area.
- The consultant is the **employer's agent**: it may also act as a project manager or as 'the Engineer' in a FIDIC contract, but has a **neutral role when checking the design compliance** with mandatory standards and when supervising construction work.



List of Qualified Staff

- Architect
- Structural engineer
- HVAC
- Electrical engineer
- Water supply and sewage
- Transport engineer (road/ railway)
- Telecommunications engineer
- Industrial technology engineer
- Sanitary engineers (doctors)
- Fire safety
- Geodesy (surveyor)
- Engineering geology
- Lawyer

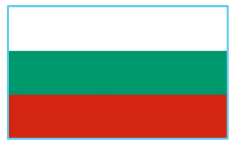
Ordinance **РД-02-20-25** Dated 3 December 2012 **for the registration of consultants**



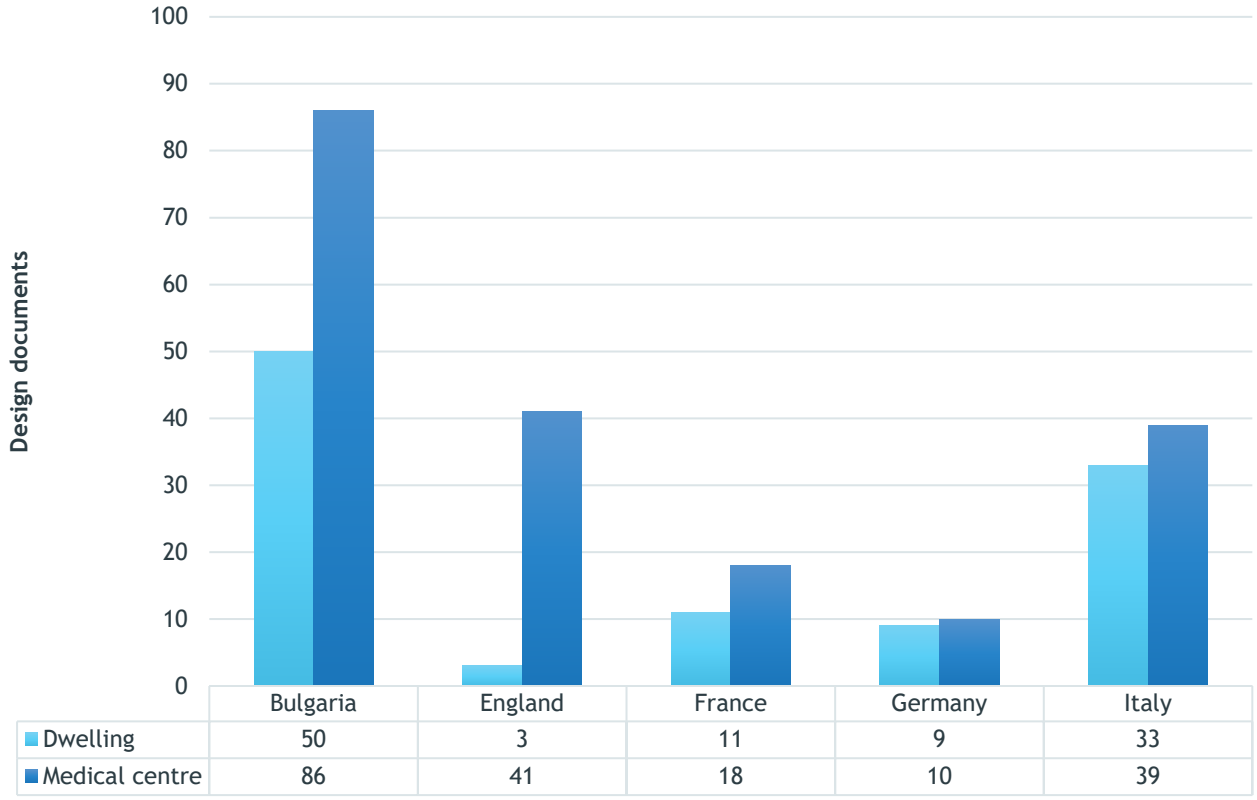
SDA, Article 166, para 1

The consultant performs the following functions, under the agreement for services signed with the employer:

- assessment of the design for compliance with the legal requirements and supervision of construction works;
- inspection and control over construction products delivered and used in the project, thus ensuring observance of the main requirements of EU Regulation 310/2011;
- optional: pre-investment investigation, preparation of the designing process and co-ordination of the construction process until the commissioning of the construction, including control over the quantities, quality and compliance of executed works with the agreed for the execution of construction, and also other activities.



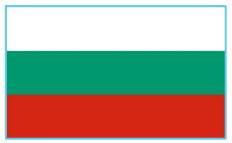
Comparison 2014 minimum design scope for building permit to undergo compliance check



	Bulgaria	England	France	Germany	Italy
Dwelling	50	3	11	9	33
Medical centre	86	41	18	10	39

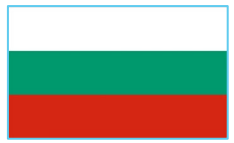
Bulgaria - Minimum design parts for building permit:

- Architecture
- Geodesy
- Landscaping
- Structures
- Electrical
- HVAC
- Plumbing & Sewage
- Fire Safety



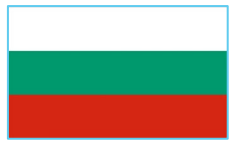
The Complex Compliance Assessment Report contains assessment of all design parts for compliance with the following requirements:

- DESIGN COMPLIANCE CHECK with
  - The provisions of the detailed zoning plan
  - The rules and the norms for spatial planning
  - The performance-based EU harmonised essential requirements
    - EU Construction Products Regulation regarding:
      - Mechanical resistance and stability
      - Fire safety
      - Hygiene, health and environmental protection
      - Accessibility and safe operation
      - Noise protection
      - Energy saving and heat conservation
      - Sustainable use of natural resources
    - Preservation of protected zones, and immovable cultural valuables
    - Reducing the risk from disaster
    - Physical protection of the sites
  - The mutual co-ordination between the parts of the design
  - The completeness and the structural compliance of the calculations
  - The requirements for construction, safe operation and technical supervision of high risk facilities, if any
  - Other specific requirements to certain kinds pursuant to a regulation
  - Environmental Protection Act, Biodiversity Act, Cultural Heritage Act or other special act
  - National requirements for use of the construction products
  - The requirements to prevent major accidents involving dangerous substances and limiting consequences relating to the human health and the environment



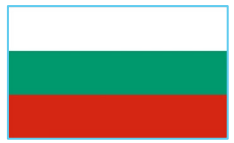
Additional authorisations for compliance assessment

- The employer shall assign a physical person authorized for technical control of part ”Structures" in phase technical and detailed design
- The list of authorised technical control experts is prepared and updated every year by the Chamber of the engineers in the investment design
- The person, carrying out technical control, shall sign all documents – graphic and text, of "Structures" part and prepare a **report**, containing a mandatory assessment of the implementation of the requirements related to structures.
- The compliance check with the rules for energy saving and heat conservation shall be performed by natural or legal persons meeting the requirements of the Energy Efficiency Act and entered into the public register under Art. 44, Para 1 of the same law.



SDA, Article 168 (7)

- The consultants exercising construction supervision shall be:
  - liable for damages caused to the employer and to the other participants in the construction, and
  - jointly liable with the constructor for damages caused due to not observing the technical rules and normative acts and the approved designs.
- The liability for the contract for construction supervision shall be with term not less than the guarantee period of the construction (10 y for structures, 5 y for finishing works, etc.).

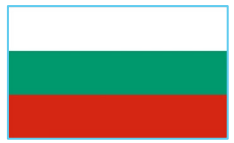


SDA: administrative liability for breach of mandatory duties

- The chief of the Directorate for National Construction Control (DNCC) may impose a proprietary sanction to registered consulting companies for infringement of the requirements for design compliance assessment in the amount of **5,000÷50,000 BGN**

Decision No.28 dated 15 January 2018 of the Pleven Regional Court confirms DNCC Penal Order for proprietary sanction of 30,000 BGN for infringement of Art. 142 (5): unlawful positive compliance assessment with the detailed zoning plan, where for mounting of cable passing through four plots one of the owners was not found and the SDA requirement for a contract in writing with the owner was not complied with.

- The **registration may be repealed** pursuant to SDA where:
  - 2 punitive decrees are enforced within 3 years, by which proprietary sanctions have been imposed to the registered company;
  - 2 punitive decrees are enforced for a period of 1 year to the individuals, who exercise their activities on behalf of and for the account of a registered company.



PI Insurance for Technical control and registered Consultant

- The designer, the person exercising technical control over part "Constructive", the consultant, the constructor and the person exercising construction supervision shall insure their professional **liability for damages caused to the other participants in the construction and/or third persons** due to unlawful actions or lack of actions at or on the occasion of fulfilment of their obligations.
- The conditions and the order for obligatory insurance, including the insurance coverage, the excluded risks, the minimum insurance sums and premiums is determined with ordinance of the Council of Ministers.
- The minimum insurance coverage is linked to the risk categories of projects.
- The insurance shall be concluded for one year and renewed every year and it shall cover the liability of the insured person according to written claims.
- With the contract for services can be agreed separate insurance for securing the liability for the specific project.

Liability for damages

Decision No.180 dated 8 August 2017 Varna Court of Appeal, confirmed by the High Court of Cassation:

- The building permit for buildings in a private plot was revoked after a complaint of the gas utility operator owing gas infrastructure which easement made unlawful any construction in the plot.
- The consultant appointed to prepare the design assessment report was found guilty in performing negligently the compliance assessment, without checking thorougly the existing infrastructure
- The positive compliance assessment report was used in the application for building permit, the consultant's negligent execution of its contractual obligations caused damages to the owner, who had paid the contractor for the civil works, and later had additional losses for the demolition of the executed unlawful construction by the municipality (totally about 80,000 EUR)
- The consultant had two insurance contracts: for the compliance assessment and supervision, covering damages caused to the other participants in the construction and/or third persons due to unlawful actions or lack of actions at or on the occasion of fulfilment of the consultant's obligations
- Ruled: **The damages are in the scope of the insurance and the insurer is the preferred defendant.**

Criminal liability of the consultant

Penal Code Art. 123. (1):

- Whosoever causes death to somebody else due to a lack of knowledge or **negligent fulfilment of a profession or another legally stipulated activity**, representing a source of high danger, shall be punished by imprisonment from one to six years.

Penal Code Art. 356:

- Whosoever violates the established construction, sanitary or fire safety rules in designing, managing or fulfilment of construction, thus exposing to danger the life of another, shall be punished by **imprisonment of up to 2 years**.
- If the violation has been committed by negligence the penalty shall be imprisonment of up to 1 year or probation.

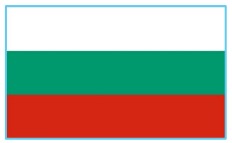
Criminal liability of the consultant

Verdict No.49 dated 27 June 2014 Razdrad District Court, confirmed by the Varna Court of Appeal, confirmed by the High Court of Cassation:

- Project 'Reconstruction of swimming pool': a 12-year girl excellent swimmer drowned due to 10-times higher than permitted speed of the sucking of water for the new facility 'Water Mushroom' causing a vacuum effect at the bottom grid
- The consultant's CEO and water expert found guilty in negligent performance of the compliance assessment and supervision, 2 years imprisonment
- **The court considers that the consultant has higher contribution in the crime than the designer and site engineer** who are working for the EPC Contractor (their verdict was 1 year imprisonment). The CEO and water expert of the consultant are independent of the contractor and employer and could have taken actions for compliance of the design with the regulations in force, which is the main function of the consultant.

Thank you!

Dr. Eng. Adriana Spassova



EQE CONTROL

ESCL ANNUAL CONFERENCE

Naples

"Construction Projects and the cultural context"

26th - 27th September 2025

Why

The Construction Projects shall meet the Employer's requirements, comply with the legal and contractual provisions, and adhere to the best standards.

However, they must also be mindful of the cultural context in which they are located.

This latter requirement seeks to uphold a broader obligation that is part of the *social contract* that binds everyone.

Who

The ESCL Conference 2025 is open to lawyers, architects, engineers, academics and, generally, to people interested in Construction Law and alternative dispute resolution methods

When

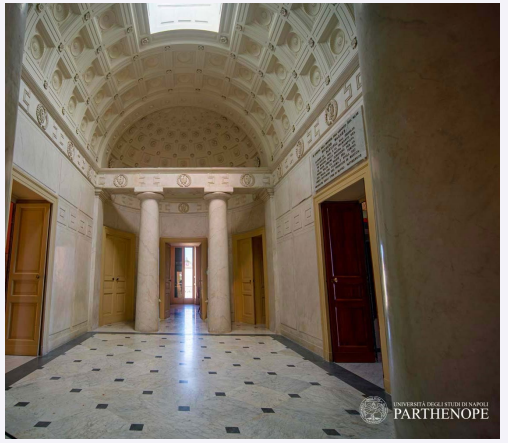
26th and 27th September 2025

Where

Parthenope University of Naples

Villa Dora D'Angri

Via Francesco Petrarca no. 80



ESCL ISCL

What

- Is there a cultural context to respect?
- Do aesthetic evaluations have legal relevance?
- Legal limits (local, national, and international) in the construction or renovation of buildings;
- Evaluation of construction projects and compatibility with the cultural context as a selection criterion for the contractor in the procurement phase;

What

- The role of the architect and the urban cultural context;
- BIM/BEM, the use of design software and respect for cultural value;
- Net zero emission and balancing it with the interest in safeguarding the cultural context;
- Renewable energy and the difficult combination with the cultural context;

What

- The choice of materials and respect for the cultural context;
- The right to a view and new raised-constructions;
- The constructive purpose of the building and respect for the context;
- The realization of smart cities: from the use of technology to respect for the urban context;
- Cultural identity and the relationship with freedom of enterprise: ethnic commercial activities;
- How to resolve disputes?

Workshop

Why: benefit from comprehensive lectures and engaging discussions focused on cultural property and ADR

Who: a selected group of practitioners and/or academics (maximum 20 people)

When: 27th September 2025 from 9 am to 11 am

Where: Parthenope University of Naples, Main building

What: Alternative dispute resolution mechanisms and cultural property!

For more information and registration

Please visit

www.escl.org

www.iscl.it

Send an email to

info@escl.org

info@iscl.it

THANK YOU VERY MUCH
AND
SEE YOU ALL IN NAPLES

ESCL ANNUAL CONFERENCE

Naples

"Construction Projects and the cultural context"

26th - 27th September 2025

Why

The Construction Projects shall meet the Employer's requirements, comply with the legal and contractual provisions, and adhere to the best standards.

However, they must also be mindful of the cultural context in which they are located.

This latter requirement seeks to uphold a broader obligation that is part of the *social contract* that binds everyone.

Who

The ESCL Conference 2025 is open to lawyers, architects, engineers, academics and, generally, to people interested in Construction Law and alternative dispute resolution methods

When

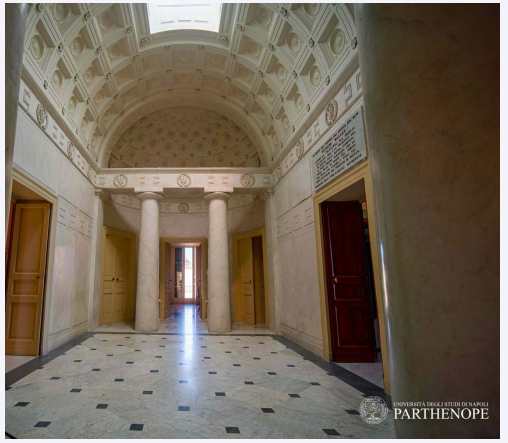
26th and 27th September 2025

Where

Parthenope University of Naples

Villa Doria d'Angri

Via Francesco Petrarca no. 80



What

- Is there a cultural context to respect?
- Do aesthetic evaluations have legal relevance?
- Legal limits (local, national, and international) in the construction or renovation of buildings;
- Evaluation of construction projects and compatibility with the cultural context as a selection criterion for the contractor in the procurement phase;

What

- The role of the architect and the urban cultural context;
- BIM/BEM, the use of design software and respect for cultural value;
- Net zero emission and balancing it with the interest in safeguarding the cultural context;
- Renewable energy and the difficult combination with the cultural context;

What

- The choice of materials and respect for the cultural context;
- The right to a view and new raised-constructions;
- The constructive purpose of the building and respect for the context;
- The realization of smart cities: from the use of technology to respect for the urban context;
- Cultural identity and the relationship with freedom of enterprise: ethnic commercial activities;
- How to resolve disputes?

Call for abstracts

We invite potential speakers to submit abstracts for panels and sessions, contributing to the diverse and rich discussions that make the ESCL Conference a must-attend event in the construction industry.

Deadline for submissions: January 17, 2025

Your abstract shall be sent to info@iscl.it

Workshop

Why: benefit from comprehensive lectures and engaging discussions focused on cultural property and ADR

Who: a selected group of practitioners and/or academics (maximum 20 people)

When: 27th September 2025 from 9 am to 11 am

Where: Parthenope University of Naples, Main building

What: Alternative dispute resolution mechanisms and cultural property!

For more information and registrations

Please visit

www.escl.org

www.iscl.it

Send an email to

info@escl.org

info@iscl.it

THANK YOU VERY MUCH
AND
SEE YOU ALL IN NAPLES

05

Early contractor involvement: design responsibility in the frame of a bouwteam, alliance or partnership

Andrea Chao – Dr. Hamish Lal

Agenda

- Bouwteam – a Dutch form of early contractor involvement
  - Definition
  - Background / history
  - A currently available model (translated to ENG)
  - How this model works
  - Impact on design responsibility

- The UK Approach
  - Two-Stage Tendering, then Design & Build with Fixed Price Lump Sum
  - ECI secondary option (X22) for use with **NEC 4** Contract (Options C or E)

- The “Target Cost” Concept
  - Practical Issues
  - Legal Issues

Bouwteam - definition

- Literally translated: construction team

- A form of collaborative contracting

- Definition:
  - Collaboration during preparation (design) phase (so not the construction phase)
  - Temporary of nature
  - Involved parties are equal (contribution wise, not hierarchy wise)
  - Coordination of involvement

Asser/Van den Berg & Van Gulijk 7-VI 2022/245

- We notice:
  - Good atmosphere / constructive conversations
  - Increased understanding of each other's position and the project
  - Not a lot of case law (although increasing with the increased usage – mainly when not using a model)
  - 'Transactional' behaviour creeps in construction phase, if the construction phase is not governed by a collaborative contract

Bouwteam - background / history

- Used in the Netherlands since the '50s to speed up construction of residential housing projects

Hoogezand-Sappemeer, aerial picture of 'Plan Spoorstraat-Kieldiep en Gorecht' as included in 'Wonen in het verleden van Drenthe en Groningen' of Bert Bulder 2018

Bouwteam - a currently available model

- Multiple models available in the Netherlands
- Dutch example 2020 – translated in 2022 – to be updated in 2025

MODEL AGREEMENT
EARLY CONTRACTOR INVOLVEMENT
Informal translation DG2020, September 2022

Bouwteam - a currently available model

- From the foreword:

"*Early Contractor Involvement (ECI) agreements are based on the premise that the agreement should cover* ***more than just*** *the legal aspect, and certainly the sociological aspect in particular. That is why agreements of this type are also referred to as "relational" or "collaborative" contracts. This means that in the ECI agreement itself – and its implementation – express consideration is given to the* ***attitude*** *and* ***behaviour*** *of the parties involved; in both* ***good times*** *and* ***difficult times****, in discussions and disputes*."

- English translation of Dutch ECI model DG2020 – used to procure several EUR Bn's of infra in NL, as well as a range of international projects

- Download: https://www.linkedin.com/pulse/model-agreement-early-contractor-involvement-dg-2020-bilateral-chao-8qdve/?trackingId=hcdfFBEvSbuHjt2cT633bA%3D%3D

Bouwteam - how this model works

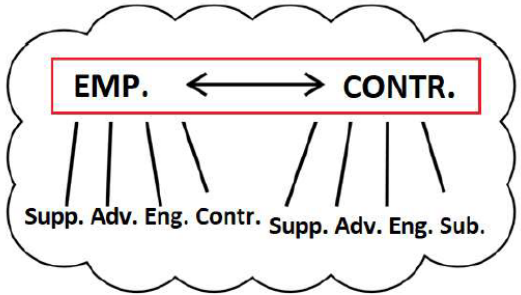
A few noteworthy elements:

- Involvement of the contractor (and other ECI-team members – next slide) during the preparation of the construction phase, including:
    - Detailed lists of tasks per team member, focussed on review & improvement – esp. from technical & financial perspectives – slide to follow with some design related examples
    - Alignment of the performance of such tasks
    - Very extensive early warning obligations (incl. repetition thereof)
- Iterative & transparent approach towards price: continuous point on the agenda, followed by final offer by the contractor – this offer needs to work for both parties
- Focus on (flexible, proactive and transparent) behaviour, contributing to good cooperation within the ECI-team
- Consideration for the ECI Team Objective & the interests of other ECI-team participants
- Focus on (proactively, timely and benevolently) finding solutions

Bouwteam - how this model works

- This model describes the bilateral relationship between the employer and the contractor in the ECI-team, seeing the contractor as an advisor to the employer (similar to for instance an engineer)

- At the same time, it explicitly recognises that the employer and the contractor may also involve other ECI-team participants, by allowing for a flow down of contractual arrangements



LEGEND

	The ECI Team
	Contract
EMP.	Employer
CONTR.	Contractor
Supp.	Supplier
Adv.	Advisor
Eng.	Engineer
Sub.	Subcontractor

Bouwteam - impact on design responsibility while using this model

"7.1 With due observance of the ECI-team Objective, the following obligations and activities will be performed in a timely manner based on the ***experience and expertise*** *of the Participant concerned:*

[…]
3. ***To the best of their ability****, assessing the accuracy and completeness, among other aspects, of and commenting on all* ***information*** *(including the documents mentioned in Clause 3.1, the schedule for the design phase and the Target Budget) provided or issued to them. This information is issued within the context of entering into the bilateral agreement with the Employer, or is issued by or at the request of the Employer during the course of the aforementioned agreement;*

4. ***To the best of their ability****, assessing the accuracy and completeness, among other aspects, of and where necessary commenting on all* ***designs, schedules, budgets, proposals*** *(including for changes) and other documentation, regardless of whether these are of a preliminary or final nature, of other Participants;"*

Bouwteam - impact on design responsibility while using this model

"7.1 […]

*5. **To the best of their ability**, advising the Employer for the purpose of the ECI-Team Objective. Advising is understood to include:*

[…]

*ii. Providing information regarding the **feasibility of the Project**, the **financial** feasibility with due observance of the Target Budget, and the **safety** of the Project, which is understood to include the structural safety and fire safety […]"*

Bouwteam - impact on design responsibility while using this model

- This model describes the pre-construction phase - it does not describe the construction phase
- This model describes for which actions the contractor is not liable during the ECI phase (involvement during decision making, suggestions within the scope of another ECI-team participants) – in both cases without prejudice to the contractor's (warning) obligations
- This model does not intend for a full transfer of design responsibility
- Under NL law: in case of an attributable breach under this model, it can result in liability of the contractor towards the employer (notwithstanding liability of other ECI-team participants towards the employer)
- Liability under this model is capped, similar to a Dutch advisor – see footnote 12 on aligning how to deal with the liability of the contractor for an attributable breach during the ECI phase, which remained unnoticed at the time and which has consequences on the costs of performance of the construction works

Bouwteam - impact on design responsibility while using this model

4 scenario's – discussed from a NL law perspective:

- An error in the design caused by the contractor during the ECI-phase, within the contractor's own scope
- An error in a design suggestion from another ECI-team participant re the scope of the contractor, which suggestion the contractor adopted
- A design suggestion given by the contractor on the scope of another participant contains an error, which suggestion was accepted
- A design prepared by another participant, outside of the scope of the contractor, has an error

Important to note: ECI may result in other sources of liability, but research & experience suggest overall significant decrease of issues & disputes

More on this topic, in NL (2023 contribution to Dutch Construction Law Review/ Tijdschrift voor Bouwrecht): https://www.linkedin.com/pulse/twee-zien-meer-dan-%25C3%25A9%25C3%25A9n-maar-wat-als-niemand-iets-zegt-andrea-chao/?trackingId=oQ8M7yQTTSeB8IZG6Hke0Q%3D%3D

The Problem …it's the design

- In most standard forms, the contractor is engaged late in the process (RIBA Stage 4) - decisions on design and construction methodology have already been taken by the Employer and Professional Consultants
- Design Risk moves *via* novation of the Professional Consultants to the D&B Contractor (with collateral warranties to the Employer)
- Design Co-Ordination Risk is also moved to D&B Contractor
- Problems:
  - Design Due Diligence
  - Setting the Contract Price
  - Increased use of Provisional Sums
  - Valuing the 'Risk Premium'

Two-Stage Tendering

- The very nature of two-stage tendering means that collaboration is almost forced on the parties as they will be working together at some stage to complete the design and package tendering of the project
- For two-stage tendering to work well it has to allow time for the contractor to sit with the design team and go through a significant amount of design to really show their influence. If the first stage is carried out too late in the process there will not be enough design time to let the contractor have an influence on the design
- There is also the risk that contractors see a two-stage tendering process as the opportunity to become ingrained in a project and then negotiate the price of the project higher than market value
- Two-stage tendering has become more common in recent years and is often used where time is constrained (as it enables design and tendering to overlap). It is also used if the design process would benefit from the technical input of a contractor in the later design stages. In this sense it is used to obtain the early appointment of a contractor. The process involves first-stage tender enquiry documentation being issued to bidding contractors at RIBA Stage 2 or 3.

See RICS Professional Guidance - Tendering Strategies

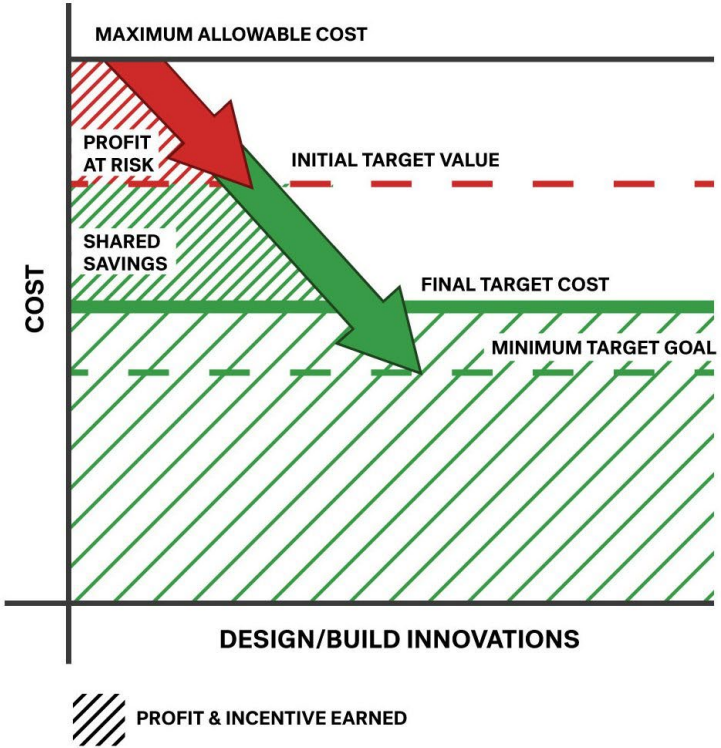
ECI & NEC4

- NEC first published drafting for ECI in November 2015
- ECI is secondary option (X22) in NEC4 Contract (Options C or E).
- The parties enter into a single two-stage cost reimbursable contract to collaborate:
  - in design and planning for construction (Stage One), before
  - progressing to the main construction phase (Stage Two)
- In Theory, Early Contractor Involvement allows:
  - design scrutiny
  - true value engineering to deliver optimal value for money
- The overall risk matrix's focal point in the **TARGET COST**

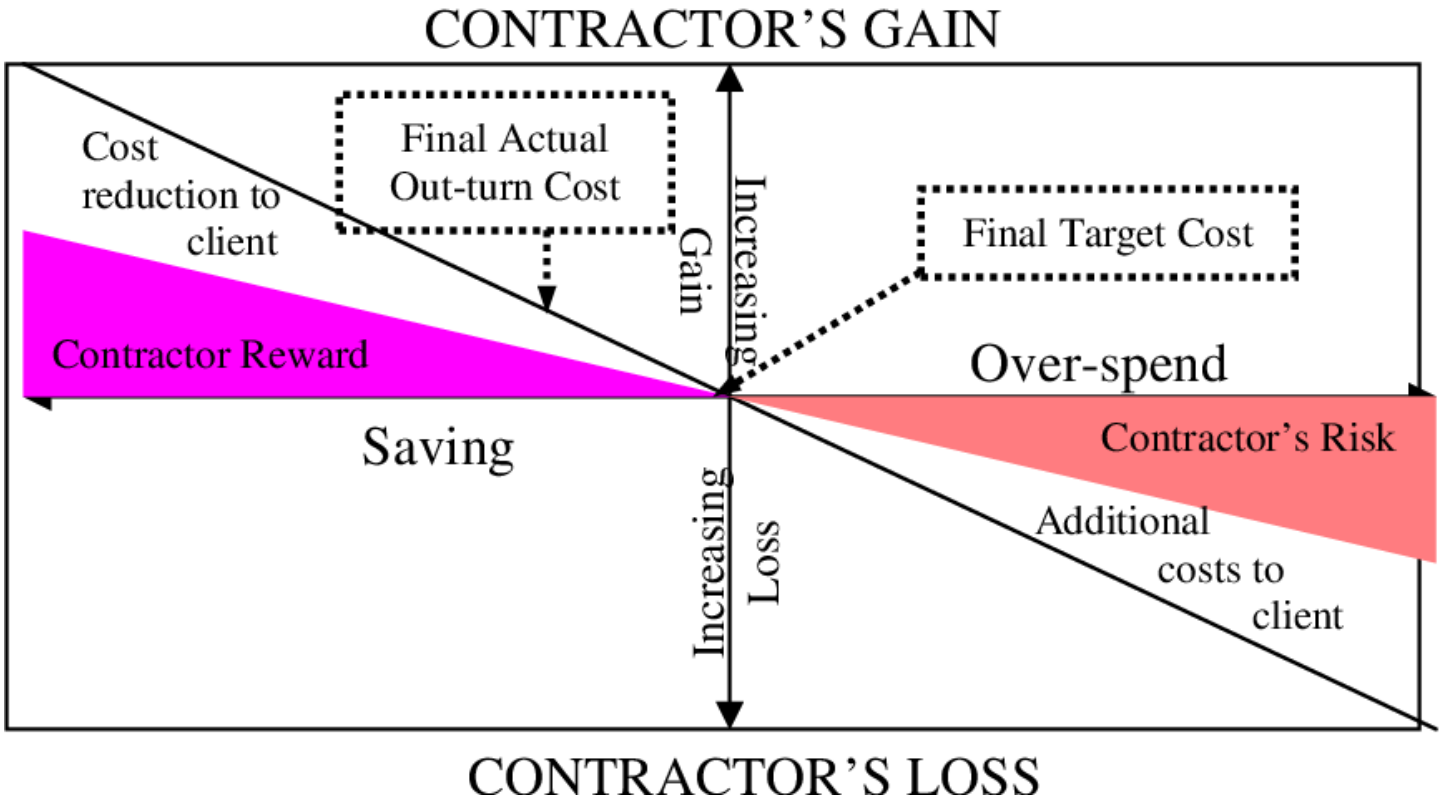
The Target Cost

- Target cost contracts are generally cost-reimbursable contracts
- A Target Cost might be set for the overall project, or for specific parts of the Works. Setting the target cost is linked directly to the design; design maturity; and residual design risk.
- In theory, the aim is to provide a financial incentive rather than to penalise.
- In theory, the target cost is set early in the process and then cost savings or overruns are shared based on an agreed formula.
- In practice,
  - Setting the Target Cost is contentious and often with caveats
  - "Gain Share" (i.e. out-turn cost below the Target Cost) is not 50/50
  - "Pain Share" (i.e. Final Cost exceeds the Target Cost)
- Contract drafting is bespoke (despite wide understanding of the Target Cost 'diagrams'

Target Cost Diagrams … lots on the www



Target Cost Diagrams … lots on the www



Legal Drafting Points

- open book accounting – Employer has access to the accounts and records of the contractor's actual costs and so agreeing variations is easier and less confrontational than with 'build only contracts'

- Still industry sceptics: Target Cost Contracts said to create a misalignment of objectives between the Employer, Contractor and Professional Team due to differing motivations:
  - Employer is motivated by cost, time and quality,
  - Contractor is motivated by profit and
  - Professional Team motivated by just quality of the end product

- What is the "gain-share" split (e.g. 60/40)?

- What is the "pain-share" split (e.g. 70/30)?

- Is overhead payable during "pain share"?

- Is profit payable during "pain share"?

- Is "pain share" capped for the Contractor (and if so, what is the cap based upon)?

- Are Liquidated Damages for Delay still payable?

- Is there a bonus for earlier Completion?

- Are all sub-contractors included in the cost reimbursable envelope and with-in the Target Cost?

Legal Drafting Points

- What is included in cost reimbursable items?
- When can the Target Cost “move”?
- Are all changes / unforeseen issues / variations part of the Target Cost?
- What happens after the Contractor has hit the “pain share” cap?
- How can the Target Cost arrangement be terminated – and – what is the fall-back contract?
- What are the Post-Termination liabilities?
- Is the final or actual Target Cost auditable?
- How does Termination of the Target Cost Contract work?

06

Material’s choises & variations mean design responsibility

Virginie Collaiuta - Martina Ferrin – Ekrem Kaya

Material’s choises & variations mean design responsibility

Italian law & case law

Martina Ferrin
DDC Studio Legale & Tributario (Milan)
Attorney

In general: private and public agreement

According to Italian law, there are two kinds of construction agreement.

The **public one**, which refers to a contract, regulated by specific procedures, through which a public administration assigns a company the execution of a work or the acquisition of a service or the supply of good. The public agreement is regulated by a special law commonly referred to as the “Codice degli appalti " which is the result of a 30-year evolution of legislation.

We will focus on private agreement, which is the contract regulated by the Civil Code, through which the contractor commits to the client to execute a work or provide a service using their own resources and at their own risk, in exchange for a compensation.

Private agreement are ruled in the Italian Civil Code, specifically according to Articles 1665 and following.

Variations: Italian Civil Law

In private construction contracts, the regulation of **design variations**, unless otherwise agreed upon by the parties within the contract, is governed by the provisions of the following articles of the Civil Code:

- Article **1659** (agreed variations of the project),
- Article **1660** (necessary variations),
- Article **1661** (variations ordered by the client).

Article 1659 c.c.

- **Variations initiated by the contractor**: The contractor is not allowed to introduce any changes or variations to the project on their own initiative, even if they consider the changes to be beneficial for the completion or quality of the work.
- **Mutually agreed variations**: Variations are allowed if the contractor and the client both agreed **in writing**, in order to ensure that the contractor cannot decide independently
- **Cost adjustments**: Even when the variations have been authorized, if the price for the entire work was determined as a lump sum, the contractor is not entitled to ask compensation for such variations or additions, unless otherwise agreed.

Article 1660 c.c.

Article 1660 of the Civil Code rules the “necessary variations”, not agreed upon, but essential for the proper completion of the work, in accordance with professional standards.

If, in order to correctly execute the work, it is necessary to introduce variations and the parties do not reach an agreement, the judge is entitled to determine the variations that need to be introduced and the corresponding price adjustments.

If the price of such variations exceed **one-sixth of the agreed price** (Article 1660, paragraph 2) **the contractor may withdraw** from the contract and may also be entitled to compensation, which, however, is not quantified by the Civil Code.

According to paragraph 3 of such article, if the variations are significant, **the client may withdraw** from the contract and is required to pay fair **compensation.**

To prevent potential complications, it is advisable to specify in the construction contract that necessary variations be communicated **in writing** to the client, allowing them to adequately assess the changes.

Article 1661 c.c.

Article 1661 rules variations to the construction contract **ordered by the client** during the execution of the work.

This provision is aimed to ensure that the project meets the client's expectations while also protecting the contractor's rights.

The article provide that if the client requests changes, these modifications must be reasonable and cannot unilaterally disadvantage the contractor.

The contractor is entitled to compensation for any additional work resulting from these changes.

If the variations significantly change the scope of the work or impose excessive burdens on the contractor, the latter has the right to withdraw from the contract and seek compensation for the work already performed.

Choise of Materials: the role of the project manager (i)

In construction projects, the responsibility for material supply could evolve the role of project manager.

In a case related to a private contract for building a villa the project manager was sued by the client because the latter alleged a poor flooring quality.

The Court of Appeal initially held the project manager liable under Article 1490 of the Civil Code; such provision concerns seller warranties for defects in purchase agreement (and it’s not related to construction agreements).

Choise of Materials: the role of the project manager (ii)

However, the Supreme Court later overturned this decision, stating that the project manager had merely provided an opinion on the material's suitability after the client had already purchased it.

The Court clarified that the project manager did not assume warranty obligations under Article 1490 because he was not in a direct contractual relationship with the supplier.

Ultimately, the Supreme Court concluded that the project manager's potential liability arises from different legal grounds related to specific oversight duties, referring in particular to article 1655 and 2230 of the Italian civil code.

Case law Sent. C. Cass. civ. 17/05/2018, n. 12116

Choise of Materials: compensation for the contractor (i)

The case involved the renovation of a warehouse, where the contractor subcontracted the roofing work to a company that supplied fiber cement sheets.

After the sheets cracked and caused water damage, the client sued the contractor under Article 1669 of the Civil Code for defects in the work. The contractor involved in the procedure also the material supplier.

At first instance the court ruled that the material supplier could not be held liable because they were merely a supplier and not involved in the construction project.

The Supreme Court did not agree with the Court of Treviso.

Choises of Materials: compensation for the contractor (ii)

En fact, according to the Supreme Court the contractor, with regard to the materials purchased from third parties, has the same role of a buyer in the case of the so-called 'chain sale.

Consequently, the contractor can sue the manufacturer company as follow:

- for contractual responsibilities, related to the damages directly connected to the breach of the contractual obligation, which can be brought under a contractual action pursuant to Article 1494, paragraph 2, of the Civil Code;
- For non-contractual responsibilities, he can be indemnified for the amount paid to the client under Article 1669 of the Civil Code due to damages suffered from defects in the materials used.

Case law: C. Cass. civ. 21/05/2020, n. 9374

Case law – Torre dei Moro (background)

The Torre dei Moro fire incident occurred on August 29, 2021, in Milan, Italy, when a 20-story residential building caught fire.

The flames quickly spread from the 15th floor to the top, engulfing the façade, which was made of flammable cladding material.

The fire destroyed much of the building and raised serious concerns about the safety of construction materials used, particularly aluminum composite panels (ACM). Investigations into the cause and the rapid spread of the fire are ongoing.

The technical material issue in related to the Combustibility level pf Samples of ACM LARSON PE Panels.

Foto 1: stato della facciata nord -ovest prima e dopo il sinistro

Case law – Torre dei Moro (technical operation)

The Scope of the Operations

During the expert operations, the court-appointed technical expert (so called CTU) appointed by the Court of Milan analyzed the ACM LARSON PE panels and verified the following:

(i) **Correct selection of the panels**: The correspondence between the selected panels and the technical and regulatory specifications required for the building was examined. The technical expert verified whether the panels were suitable for the intended application, taking into account combustibility and safety requirements.

(ii) **Correct certification**: technical expert checked whether the panels complied with the applicable regulations regarding certification and approval, including fire resistance standards. The technical expert verified that the materials used had obtained all necessary certifications to be installed in the building.

(iii) **Correct installation**: The technical expert assessed whether the panels were installed correctly, in accordance with the required technical procedures. This included an analysis of the fastening methods and the use of any auxiliary materials that might have influenced the safety and durability of the installation.

(iv) **Causes of the fire and its propagation**: Lastly, the technical expert investigated the causes of the fire, focusing also on how it spread, evaluating whether the ACM panels contributed to the flame propagation. This included a detailed analysis of the combustibility of the polyethylene core and the behavior of the external aluminum cladding during the fire.

Case law – Torre dei Moro

ura 34: fotogramma ad 1 secondo dall'inizio del filmato (appendice 22 alla relazione Ing. Bagnato)

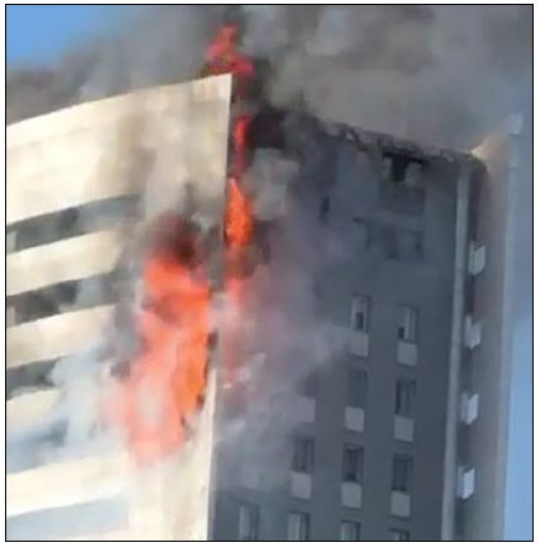


Figura 36: fotogramma a 27 secondi dall'inizio del filmato: le fiamme su retro della vela hanno raggiunto il 19° piano prima di quelle sul fronte verso strada

Case law – Torre dei Moro (Result of the opinion)

Outcome of the technical expert report:

An analysis of the report revealed that the **choice of material** and its installation were central to the issue.

The panels in question might have been suitable for indoor use but were certainly not appropriate for external use on a skyscraper. The panels were used in a **way inconsistent with the tests** conducted at the Giordano Institute and the approval from the Ministry of the Interior. This deviation contributed to the issue.

The final report highlights the key roles played by several parties, including the panel manufacturer (Alucoli), the supplier (Zambonini), the designers, and the installers. The manufacturer involved is the same of the fires in London and Valencia.

At present, there is no judgment stating the civil responsibilities since the parties have not formally initiated civil proceedings.

06

Material’s choices & variations mean design responsibility

Virginie Colaiuta

Choices of Construction Material, Design Changes and Their Impacts – English law perspectives

by
Virginie Colaiuta

Supply of Goods and Services Act 1982

- Section 4 of the Supply of Goods and Services Act 1982

"(1) Except as provided by this section and section 5 below and subject to the provisions of any other enactment, there is no implied condition or warranty about the quality or fitness for any particular purpose of goods supplied under a [relevant contract for the transfer of goods].

(2) Where, under such a contract, the transferor transfers the property in goods in the course of a business, there is an implied condition that the goods supplied under the contract are of satisfactory quality.

(2A) For the purposes of this section and section 5 below, goods are of satisfactory quality if they meet the standard that a reasonable person would regard as satisfactory, taking account of any description of the goods, the price (if relevant) and all the other relevant circumstances."

Supply of Goods and Services Act 1982

"(4) Subsection (5) below applies where, under a [relevant contract for the transfer of goods], the transferor transfers the property in goods in the course of a business and the transferee, expressly or by implication, makes known—

(a) to the transferor, or

(b) where the consideration or part of the consideration for the transfer is a sum payable by instalments and the goods were previously sold by a credit-broker to the transferor, to that credit-broker,

any particular purpose for which the goods are being acquired.

(5) In that case there is (subject to subsection (6) below) an implied condition that the goods supplied under the contract are reasonably fit for that purpose, whether or not that is a purpose for which such goods are commonly supplied.

(6) Subsection (5) above does not apply where the circumstances show that the transferee does not rely, or that it is unreasonable for him to rely, on the skill or judgment of the transferor or credit-broker."

Supply of Goods and Services Act 1982

- Section 13 of the Supply of Goods and Services Act 1982

"*In a [relevant contract for the supply of a service] where the supplier is acting in the course of a business, there is an implied term that the supplier will carry out the service with reasonable care and skill.*"

Contractor's obligations – reasonable skill and care

- The reasonable skill and care obligation is an implied duty to exercise the level of skill and care expected of any reasonably competent member of the profession.

- Difference between fit for purpose and reasonable skill and care:
  A party can discharge its obligation of reasonable skill and care if it proves that it performed the works in accordance with reasonable professional standards, even if the works are not fit for purpose. On the other hand, Fitness for purpose is an (almost) absolute obligation. The party in breach will not be able to plead as a defence that it has discharged its obligation with reasonable skill and care.

Contractor's obligations – fitness for purpose

- Within the construction sector, contractors are usually under the obligation to comply with a "fit for purpose" obligation.

- *MT Højgaard A/S v E.On Climate And Renewables UK Robin Rigg East Ltd & Anor* [2015] EWCA Civ 407

  "*It is not unknown for construction contracts to require the contractor (a) to comply with particular specifications and standards and (b) to achieve a particular result. Such a contract, if worded with sufficient clarity, may impose a double obligation upon the contractor. He must as a minimum comply with the relevant specifications and standards. He must also take such further steps as are necessary to ensure that he achieves the specified result. In other words he must ensure that the finished structure conforms with that which he has warranted.*" (79)

Contractor's obligations – fitness for purpose

"*Sometimes, again, a contractor will expressly undertake to carry out work which will perform a certain duty or function in conformity with plans and specifications, and it turns out that the work constructed in accordance with the plans and specifications will not perform that duty or function. It would appear that generally the express obligation to construct a work capable of carrying out the duty in question overrides the obligation to comply with the plans and specifications, and the contractor will be liable for the failure of the work notwithstanding that it is carried out in accordance with the plans and specification. Nor will he be entitled to extra payment for amending the work so that it will perform the stipulated duty.*"

- The above principle was stated since 1959 in the 8th Edition of Hudson's Building and Engineering Contracts.

Contractor's obligations – fitness for purpose

- Generally, a warranty is implied in a construction contract that the goods and materials supplied by the contractor will be suitable for their intended purpose, subject to the following limitations:

  - There are express terms excluding this obligation in the contract;
  - The employer did not rely upon the contractor's skill and judgment in selecting the materials (for instance, if the contract refers to a specific supplier who only supplies certain materials);
  - The contractor's duty to provide materials that are fit for their intended purpose is limited to the extent that the relevant details of the requirements are communicated to the contractor.

Contractor's obligations – fitness for purpose

- In *The Steel Company of Canada Limited v Willand Management Limited* [1966] SCR 746, the contractor agreed to perform roofing works following the employer's specifications and provided a guarantee that the roof would remain weathertight for five years.

- When the roof failed within the five-year period due to the unsuitability of one of the specified materials, the Supreme Court of Canada ruled that the contractor was liable under the guarantee, despite having adhered to the material specifications.

Contractor's obligations – fitness for purpose

The English Court of Appeal in *MT Højgaard A/S v E.On Climate And Renewables UK Robin Rigg East Ltd & Anor* cited a decision rendered by the Supreme Court of Canada in *The Steel Company of Canada Limited v Willand Management Limited* [1966] SCR 746, which stated that:

"*It accordingly appears to me that the question which lies at the heart of this appeal is whether the responsibility for the results of using Curadex [a fire resistant adhesive] rests upon the appellant who prescribed it or upon the respondent who applied it, and in this regard it seems to me to be of first importance to consider the circumstances under which this adhesive came to be included in the specifications […] It is true that Curadex was a material selected by the appellant but it was one of the materials which the respondent agreed to employ in the work and which it thereby agreed to guarantee as "first class and without defect". I think these latter words must be construed as meaning "first class and without defect" for the purpose of its intended use.*"

Contractor's obligations – fitness for purpose

- Also see *Gloucestershire County Council v. Richardson* [1969] A.C. 480

"*When [a contractor] engages to do certain work and supply materials, [he] impliedly warrants that the materials will be of good quality, unless the particular circumstances of the case show that the parties intended otherwise*" (494)

Contractor's obligations – fitness for purpose

Reliance on the contractors' skill and judgment in selecting the materials

- In *Young & Marten v McManus Childs* [1969] 1 AC 454, HL, the contractor subcontracted roofing works and specified a particular type of tile for the subcontractor to use. These tiles were produced by only one manufacturer.
- Despite initially appearing to be of good quality, the tiles began to deteriorate within 12 months due to a hidden defect.
- The contractor sought damages from the subcontractor, claiming breach of the implied warranty that the tiles would be suitable for their intended purpose.
- The court ruled that the contractor had not relied on the subcontractor's expertise or judgment in selecting the materials.
- Since the contractor had chosen the tiles and there was only one manufacturer, there was no implied warranty from the subcontractor regarding the fitness of the tiles. By selecting the materials himself, the contractor assumed responsibility for their suitability.

Performance and Longevity

Communication of the employer's requirements to the contractor

- In *Jewson Ltd. v Boyhan* [2003] EWCA Civ 1030, the claimant acquired a former convent school building that he planned to convert into flats. For this purpose, he bought 12 electric boilers from a supplier.
- The boilers reduced the energy rating of the flats and thus affected their marketability. Therefore, the claimant claimed that the boilers "*were neither of satisfactory quality nor reasonably fit for their purpose because they reduced the [energy] ratings on the flats*".
- The Court of Appeal held that there was nothing unsatisfactory about the intrinsic qualities of the boilers.
- The Court of Appeal also held that the claimant had not given to the supplier information about the nature of the building being converted and that the claimant had not relied upon the skill and judgment of the supplier in relation to whether the boilers were suitable for the particular flats, having regard to the energy rating.
- Accordingly, the supplier was not in breach of the fitness for purpose obligation.

Contractor’s obligations – fitness for purpose

- Also see *Slater v Finning Ltd* [1996] UKHL 59

“*After all, if the buyer's purpose is insufficiently communicated, the buyer cannot reasonably rely on the seller's skill or judgment to ensure that the goods answer that purpose*.”

Contractor's obligations with respect to variations

- Contractors are expected, when they are instructed changes in the material to be used, to ensure that the new materials are suitable for the project.

- See *Vainker & Anor v Marbank Construction Ltd & Ors* [2024] EWHC 667 (TCC), where the contractor was instructed to change the floor coverage to thinner tiles and completed the works without ensuring that the new instructed tiles were suitable.

- The court held that the contractor was responsible to ensure finished floor level even if the client instructed to change to thinner tiles which were not compatible with the original design.

Valuation of variations

- When the contract does not provide for any valuation method, the Courts will assess what is the "*fair valuation*" of the variation.

- *Henry Boot Construction Ltd v. Alstom Combined Cycles Ltd (formerly GEC Alsthom Combined Cycles Ltd)* [1999] EWHC Technology 263:

  "*A fair valuation when used as an alternative to a valuation by or by reference to contract rates and prices generally means a valuation which will not give the contractor more than his actual costs reasonably and necessarily incurred plus similar allowances for overheads and profit for anything more would confer on him an additional margin for profit and would not be fair to the employer*."

Quality of materials under FIDIC 2017

- Clause 7.1 (Manner of Execution):

"*The Contractor shall carry out the manufacture, supply, installation, testing and commissioning and/or repair of Plant, the production, manufacture, supply and testing of Materials, and all other operations and activities during the execution of the Works:*
(a) in the manner (if any) specified in the Contract;
(b) in a proper workmanlike and careful manner, in accordance with recognised good practice; and
(c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract."

- Clause 7.2 (Samples):

"*The Contractor shall submit the following samples of Materials, and relevant information, to the Engineer for consent prior to using the Materials in or for the Works:*
(a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and
(b) additional samples instructed by the Engineer as a Variation."

Variations under FIDIC Red Book 2017

- Clause 13.1 (Right to Vary)

"*The Contractor shall be bound by each Variation instructed under Sub-Clause 13.3.1 [Variation by Instruction], and shall execute the Variation with due expedition and without delay, unless the Contractor promptly gives a Notice to the Engineer stating (with detailed supporting particulars) that:*
(a) the varied work was Unforeseeable having regard to the scope and nature of the Works described in the Specification;
(b) the Contractor cannot readily obtain the Goods required for the Variation; or
(c) it will adversely affect the Contractor's ability to comply with Sub-Clause 4.8 [Health and Safety Obligations] and/or Sub-Clause 4.18 [Protection of the Environment]
[…]
Each Variation may include: […] (ii) changes to the quality and other characteristics of any item of work"

Variations under FIDIC Red Book 2017

- **Clause 13.2 (Value Engineering)**

"*The Contractor may, at any time, submit to the Engineer a written proposal which (in the Contractor's opinion) will, if adopted:*
(a) accelerate completion;
(b) reduce the cost to the Employer of executing, maintaining or operating the Works;
(c) improve the efficiency or value to the Employer of the completed Works; or
(d) otherwise be of benefit to the Employer.
[…]
If the Engineer gives his/her consent to the proposal, with or without comments, the Engineer shall then instruct a Variation."

Variations under FIDIC Red Book 2017

- Clause 13.3 (Variation Procedure)

"*The Engineer may instruct a Variation by giving a Notice (describing the required change and stating any requirements for the recording of Costs) to the Contractor in accordance with Sub-Clause 3.5 [Engineer's Instructions].*"

- Clause 3.5 (Engineer's Instructions)

"[…] If an instruction states that it constitutes a Variation, Sub-Clause 13.3.1 [Variation by Instruction] shall apply.
If not so stated, and the Contractor considers that the instruction:
(a) constitutes a Variation (or involves work that is already part of an existing Variation); or
(b) does not comply with applicable Laws or will reduce the safety of the Works or is technically impossible
the Contractor shall immediately, and before commencing any work related to the instruction, give a Notice to the Engineer with reasons. If the Engineer does not respond within 7 days after receiving this Notice, by giving a Notice confirming, reversing or varying the instruction, the Engineer shall be deemed to have revoked the instruction."

Valuation of variations under FIDIC 2017

- Clause 13.3 (Variation Procedure):

"*The Contractor shall proceed with execution of the Variation and shall within 28 days (or other period proposed by the Contractor and agreed by the Engineer) of receiving the Engineer's instruction, submit to the Engineer detailed particulars including: […] the Contractor's proposal for adjustment to the Contract Price by valuing the Variation in accordance with Clause 12 [Measurement and Valuation], with supporting particulars (which shall include identification of any estimated quantities and, if the Contractor incurs or will incur Cost as a result of any necessary modification to the Time for Completion, shall show the additional payment (if any) to which the Contractor considers that the Contractor is entitled). If the Parties have agreed to the omission of any work which is to be carried out by others, the Contractor's proposal may also include the amount of any loss of profit and other losses and damages suffered (or to be suffered) by the Contractor as a result of the omission.*
[…] The Engineer shall then proceed under Sub-Clause 3.7 [Agreement or Determination] to agree or determine: […] the adjustment to the Contract Price (including valuation of the Variation in accordance with Clause 12 [Measurement and Valuation] using measured quantities of the varied work)"

06

Material’s choises & variations mean design responsibility

Matina Ferrin – Ekrem Kaya

Construction Material Choices, Design Changes and Their Impacts

Real-Life Examples from Projects across the UK

Ekrem Kaya
Partner, HKA
SCL Türkiye, Vice President
Civil Engineer

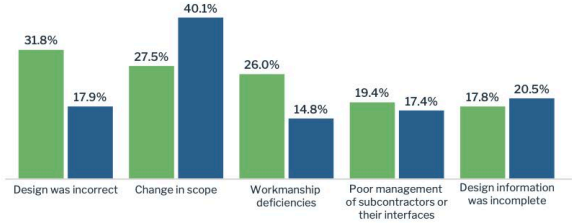
Top Causes of Claim/Dispute (CRUX 2024)

Europe

Europe is the only world region where incorrect design displaces scope change at the top of the CRUX causation table for claims and disputes.

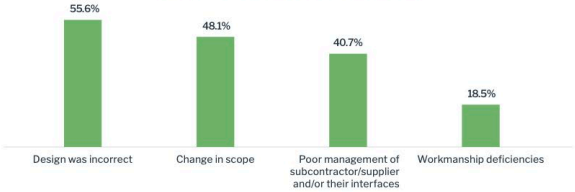
While almost a third of European capital projects (31.8%) were impacted by design error, close to half featured one or more of the 'design trio' of incorrect, incomplete and late design information. That percentage (48.4%) is eight points higher than the rest-of-world equivalent.

Top Causes of Claim / Dispute – Europe v Rest of the World



% of projects that had these causes

Europe Industrial & Manufacturing



% of projects that had these causes

516 projects

29 countries

$452 m average CapEx value

Top causes

1. Design was incorrect
2. Change in scope
3. Workmanship deficiencies

Some headline figures reflect the maturity of the European market and other factors – particularly, the dataset's high proportion of building projects. More than half the 516 total analysed (55%) were buildings.

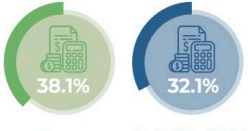
Some causal factors are amplified on certain types of projects in Europe. Industrial and manufacturing projects experienced a notably higher incidence of incorrect design (55.6%), scope change (48.1%), and poor management of subcontractors or their interfaces (40.7%). Failures in contract management and administration were also common, pushing workmanship deficiencies (18.5%) down the causation table.

Programme overruns, overall, were significant (at 62.3% of planned schedules) but shorter than the global average. This advantage is reversed for costs, as sums in dispute averaged 38.1%.

Extension of time

Extension of time as a percentage of planned duration

Cost claimed



Cost claimed as a percentage of total CapEx value

In the building sector, the high volume, quick turnaround favoured by developers and contractors compresses the planning phase of projects. Such pressure forces design errors. In other regions, the heavier impact of change in scope (impacting 40.1% of projects) is indicative of less mature processes and unclear client requirements.

Performance and Longevity

Grenfell Tower Fire (UK)

- The refurbishment of Grenfell Tower included the use of combustible cladding materials, which did not comply with fire safety regulations and led to a catastrophic fire on 14 July 2017, resulting in the death of seventy - two people.
- The incident raised serious questions about liability among contractors, architects, and material suppliers regarding the choice of materials used in the building's renovation.
- The aftermath led to extensive legal proceedings, claims, and investigations, resulting in widespread changes to regulations regarding building materials, particularly for high-rise buildings.
- Multiple lawsuits were filed against the management company, contractors, and architects involved in the renovation. The public inquiry also led to significant regulatory reforms in fire safety standards.

Grenfell Tower Fire (UK)

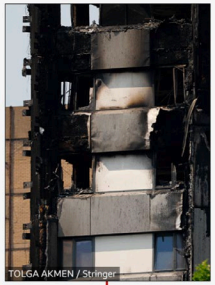
The primary issue was the use of combustible cladding materials on Grenfell Tower, specifically the Reynobond PE (polyethylene) cladding panels that were installed during a refurbishment project completed in 2016. These materials did not meet safety regulations regarding fire resistance and contributed to the rapid spread of the fire.

In his report to the public inquiry, Professor Luke Bisby said evidence "strongly supports" the theory that the polyethylene material in the cladding was the primary cause of the fire's spread.

"*The ACM (aluminium composite material) product on Grenfell Tower incorporates a highly combustible polyethylene polymer filler which melts, drips, and flows at elevated temperature. The polyethylene filler material is expected to release large amounts of energy during combustion*".

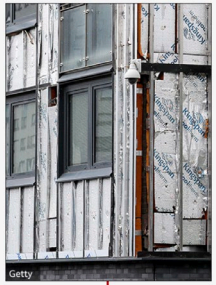
Cladding manufacturer

- Arconic "deliberately concealed" the safety risks of its product, which experts said was "by far the largest contributor" to the fire



Insulation manufacturers

- Celotex made "false and misleading claims" about its product being suitable for Grenfell, while Kingspan misled the market by not revealing the limitations of its product



Refurbishment companies

- Architect Studio E, cladding installer Harley, project manager Rydon and consultants Exova failed to identify and act on their responsibilities over fire safety

Local authority

- The Royal Borough of Kensington and Chelsea council and its social housing arm, the Tenant Management Organisation, showed a "persistent indifference to fire safety"

Governments from 1991 to 2010

- Missed several opportunities to address cladding risks, including a 1999 MPs' report which said only non-combustible cladding should be used on tall buildings

Governments from 2010 to 2017

- Cut red tape to such an extent that "even matters affecting the safety of life were ignored, delayed or disregarded"

The final report of the Grenfell Inquiry, issued on September 4, 2024, revealed a widespread breakdown across government and the private sector that led to Grenfell Tower becoming a dangerous firetrap. Key findings include:

- The coalition government under David Cameron prioritized cutting regulations, often ignoring or delaying safety concerns.
- The housing department was poorly managed, leaving fire safety in the hands of a junior official.
- The Building Research Establishment (BRE), once the government's expert advisor on construction standards, was exposed to product manufacturers' undue influence after its privatization in 1997.
- There was widespread dishonesty by manufacturers, particularly Arconic, which concealed the danger of its cladding, and Celotex and Kingspan, which made misleading claims about the insulation.
- The refurbishment of Grenfell Tower was mismanaged, with a breakdown in communication between contractors and the local Tenant Management Organisation (TMO), leading to neglect of fire safety.
- Various contractors, including the architect (Studio E), principal contractor (Rydon), and sub-contractor (Harley Facades), failed to recognize or address fire safety risks, with responsibilities being passed around without accountability.

This chain of regulatory failure, dishonesty, and mismanagement contributed to the tragic consequences of the Grenfell fire.

Environmental and Regulatory Compliance

Crossrail Project (UK)

The Crossrail Project, officially known as the Elizabeth Line, is a major infrastructure initiative aimed at enhancing transportation throughout London and its surrounding regions.

The project management team prioritized compliance with environmental regulations and the quality of materials, particularly focusing on safety and sustainability.

Material Safety and Sustainability Concerns

- Concerns arose regarding certain insulation and cladding materials potentially failing to meet the stringent safety standards required for underground operations. The materials selected for track and tunnel linings underwent rigorous scrutiny to ensure compliance with fire safety regulations.
- Environmental sustainability remained a core focus, with stakeholders debating the use of recycled materials and those capable of reducing the project's carbon footprint.
- Emphasis on environmental compliance and quality of materials.
- Developed a construction carbon footprint tool for benchmarking.
- Over 7 million tonnes of excavated material was diverted from landfill for beneficial use.

Wallasea Island, shown in 2012, consisted mainly of agricultural land before underg its restoration. (Courtesy of Royal Society for the Protection of Birds)

As shown in this 2019 photo, Wallasea Island now consists of multiple, diverse natural habitats that are designed to attract a wide range of birds and other wildlife. (Courtesy of Royal Society for the Protection of Birds)

Lessons Learned and Case Study

- Crossrail also explored the use of Ultra Low Carbon Concrete, instead of Ordinary Portland Cement (traditional cement).

- The trials focused on using alkali-activated cement that incorporates 95% ground granulated blast furnace slag (ggbs), with a design life of 120 years.

- However, the lack of current standards supporting these innovative materials hindered their adoption, despite historical evidence of their efficacy.

Ultra Low Carbon Concrete in Practice

Chatham Station, which opened in January 2023, showcases the successful application of Ultra Low Carbon Concrete, saving approximately 62 tonnes of carbon emissions. This initiative by Network Rail demonstrates how sustainable alternatives can lead to significant reductions in embodied carbon, emphasizing the need for ongoing exploration of cement-free solutions to achieve carbon reduction targets.

The trial and implementation of ultra-low carbon concrete underscore the importance of sustainable practices within the construction industry. Despite challenges regarding standards, the drive to reduce carbon emissions is gaining momentum. Embracing these innovations is imperative for designers and engineers to foster a greener future and minimize the environmental impact of construction.

Millenium Dome (UK)

Challenges and Material Choices

- The Millennium Dome was constructed to host the Millennium Experience, a significant exhibition centre celebrating the turn of the millennium.
- The project encountered notable challenges related to the materials used, particularly the fabric of the dome and its structural components.
- The initial design utilized PVC-coated polyester for cost savings.
- Due to the government's push for long-term use considerations, the project shifted to Polytetrafluoroethylene (PTFE)-coated glass fibre to prolong durability and reduce maintenance issues.
- It is also alleged that after intense pressure from Greenpeace, the material was changed to PTFE-coated glass fibre
- This change in the intended use and performance of the structure led to a change in the material selection for the dome fabric.

Material Choices and Changes

- PTFE/glass fibers are durable and do not require additives.
- PVC/polyester fibers are flammable and need additional safety measures.
- Selected materials were evaluated for light transmission:
  - 15% light through outer fabric.
  - 75% light through inner lining.
- Performance improvements led to enhanced aesthetic and functional qualities.

Following on this decision:

- Updates to fabric pattern and attachment details were essential.
- Precise measurements are required for the arrangement of 25-meter panels.
- Buro Happold used detailed net modelling for fabric structure representation.
- Cutting patterns adjusted to accommodate material stretching based on tests.

- The decision to change the fabric material put up the cost of the roof material from £6.1M to £14M, although the dome structure still came in under budget at £43M.

The Millennium Bridge, London

- A steel suspension bridge for pedestrians crossing the River Thames connecting Bankside with the City of London and is maintained by Bridge House Estates, overseen by the City of London Corporation.
- The bridge is located between Southwark Bridge and Blackfriars Railway Bridge, near cultural landmarks like the Globe Theatre and Tate Modern.
- Length: 325 meters (1,066 feet); Width: 4 meters (13 feet); Longest span: 144 meters (472 feet).
- Constructed at a cost of approximately £18.2 million, funded by the Millennium Commission and the London Bridge Trust.

Overview of the Millennium Bridge

- The Millennium Bridge in London was designed to be a shallow, stressed cable suspension bridge that would provide great views of St Paul's Cathedral and the Tate Modern.
- Construction began in 1998, and the bridge opened on June 10, 2000.
- Pedestrians walked across the bridge and, to their surprise, it began to sway. While some bridge sway is normal, the swaying got larger and larger until it was deemed unsafe. Luckily there were no serious injuries.
- Nicknamed 'Wobbly Bridge' due to a swaying motion experienced on opening day, it was closed for modifications and reopened in February 2002.

Reason

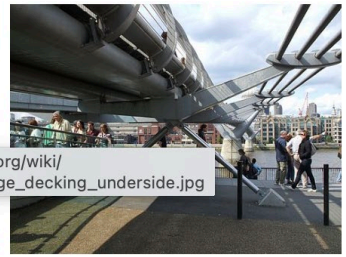
- Although the bridge was designed to withstand wind and weight, the engineering design did not factor in human behaviour. When the surface beneath our feet becomes unstable, we instinctively widen our stance. In this case, when pedestrians widened their stances, they inadvertently added energy to the bridge's already present small wobble. The pedestrians were acting as a negative damper on the bridge. Thus, the small wobble turned into a large wobble.

- The risks of lateral vibration in lightweight bridges are well known. Any bridge with lateral frequency modes of less than 1.3 Hz, and sufficiently low mass, could witness the same phenomenon with sufficient pedestrian loading. The greater the number of people, the greater the amplitude of the vibrations.

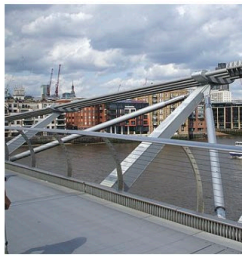
Conclusion

- Installation of several dampers helped control vibrations and ensured safety.
- The bridge reopened in 2002 without significant vibrations, showcasing effective engineering solutions.
- The Millennium Bridge has become a cultural icon, featured in films and music videos. It serves as a case study in innovative engineering, highlighting the importance of thorough testing and pedestrian dynamics in bridge design.
- Overall, the Millennium Bridge stands as a testament to overcoming challenges and is an integral part of London's landscape.

Chevron dampers



Vertical to ground dampers



Pier dampers

Moving end of pier damper

Tuned mass damper

07

Fitness for purpose & design/professional indemnity insurance

Rob Bleeker – Sara Due Ilsøe

Dutch CC and General Conditions

Client designs: **UAV 2012**

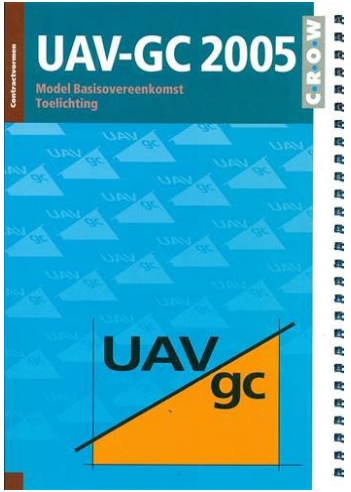
Contractor (partly) designs: **UAV-GC 2005**

> **UAV-GC** par. 4-3:
>
> the work shall be in accordance with the contractual requirements that "include requirements resulting from the ordinary use for which the Works are intended"

Equivalent to art 7:17 **CC** for sale of goods; no equivalent in **CC** title for construction

Contracts usually do contain functional requirements:… the canal shall enable CEMT-VI ships.

Client vs contractor design



Both Clients and Contractors hire engineering companies for the design

- If the engineer works for the *client*: Dutch **CC** and **GC**: liability according to *best endeavours*

UAV-GC par. 4-1: Contractor is liable for any defect …
UAV-GC par. 4-9: … unless he proves that a defect is attributable to Client

UAV-GC contain explanatory notes: matters of *state of the art* left to case law

- So if the engineer works for the *contractor*: **UAV-GC**: transformation of liability?

Client vs contractor design

Case law:

- Bubble Deck (ECLI:NL:RBNNE:2023;1083; **UAV-GC**)
- Ess De; bacteriological waste water treatment (ECLI:NL:RBOBR:2022: 3246; **UAV-GC**)
- Interflow (ECLI:NL:RBNNE:2023:810; **UAV+ design obligations**; goed en deugdelijk werk/good and sound workmanship)

State of the art-defense denied; obligation to meet very general requirements prevail

D&C dilemma

Early contractor involvement: the sooner you start, the less you know

How should a contractor calculate *terra incognita*?

The game of risk assessment

Calculator of risks vs calculation of costs

D&C dilemma

The essence of risk: *resicum*; scriba Giovanni, Genova 1156

Result: client pays (far) too much or contractor gets (far) too little

No legal framework for *iustum praetium*

Exciting business model vs: **pay what it costs**

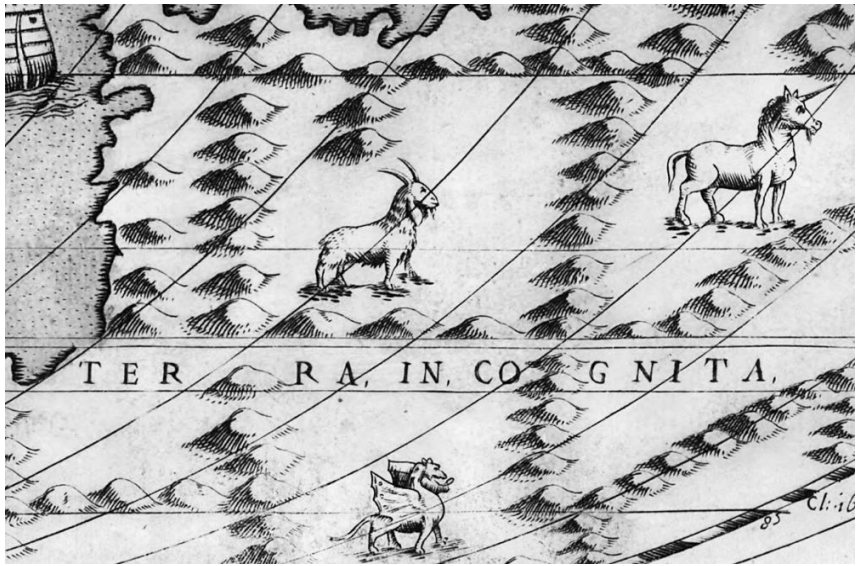
UAV-GC 2025

will be launched in January 2025

will reduce the risk of *terra incognita*

but will not solve the fundamentally wrong approach in case law

and therefor still not fit for complex and large infrastructural projects



Alternatives for risk calculation

UAV-GC as a single base of contract (tendered/fixed price): disappearing for larger and more complex contracts

Instead:Two stage tendering/early contractor involvement:

- Standard two stage contract developped by **IBR** and **VU**
- collaborative contracts: **DG 2020** and **KBNL 2021**
- cost plus: 2024:
  - target price/doelkosten/richtprijs
  - and bonus/malus for over or under-achievements
  - similar principles as e.g. **NEC4**

Fit for purpose and insurance

PI coverage

Still relatively new

Enormous variety

No consistence in definitions

Coverage if Contract defines original purpose and use

Exclusions:

- Only if the design is accordance with practice conventionally accepted as appropriate
- No unforeseen ground conditions
- No process engineering
- Et cetera

To conclude

Dutch practice of D&C contracts *de facto* seems to have ended up as guaranteed result of fitness for purpose

- as a consequence Dutch contractors do not participate anymore in large complex infrastructural tenders
- **UAV-GC 2025** will not solve the problem
- nor will PI insurance
- cost plus contracts will provide part of the solution

What is ”Fit for purpose”?

- Originates from the 1870 English case *Francis v. Cockerell* regarding sale of goods
- An obligation to ensure that the ”work” is fit for its intended purpose
- Compliance with standard practices and absence of negligence will not release contractor from liability
- The contractor is accountable for failures in materials and/or methods even if these were widely accepted at the time of construction

MT Højgaard A/S v. E.ON – The facts

- Turnkey contract for the construction of a offshore wind farm
- The contract contained a fit for purpose clause defined as:
  ”[…] *fitness for purpose in accordance with, and as can properly be interferred from, the Employer’s Requirements.”*
- The Employer’s Requirements referred to the industry standard J101 but also the requirement:
  ”The design of the foundations shall ensure a lifetime of 20 years in every aspect without planned replacement.”
- Later, it was discovered that the foundations were failing due to an error in the standard

What was most important; The industry standard or the “fit for purpose”-clause?

MT Højgaard v. E.ON - Supreme Court

- ”[…] *the courts are generally inclined to give full effect to the requirement that the item as produced complies with the prescribed criteria, on the basis that, even if the customer or employer has specified or approved the design, it is the contractor who can be expected to take the risk if he agreed to work to a design which would render the item incapable of meeting the criteria to which he has agreed.”*

- The Supreme Court also found:
  - The industry standard was to be understood as a minimum requirement and
  - MT Højgaard bore the risk that this requirement were not sufficient to achieve a lifetime of 20 years

- **The “fit for purpose”-obligation ‘won’**

Fit for purpose in Danish law

- No concept in Danish law that truly equals ”fit for purpose”
- Danish construction law is negligence based
- The AB 18 and ABR 18, Clause 12(1):
  - The work must be executed in accordance with the contract, good professional practices and the owner’s instructions
- The turnkey contractor has an implied obligation to ensure that the work is fit for its intended purpose, **but**:
  - Only obligated to operate with ”reasonable skill and care”
  - Not responsible if the used methods and/or materials was widely accepted at the time of construction

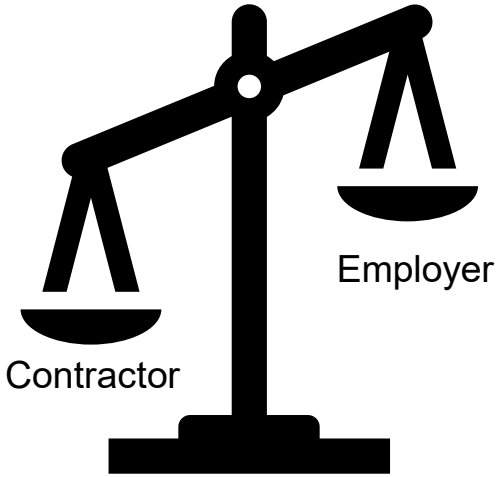
“State of the art”

- General rule under Danish construction law:
  - The contractor is not liable if material/industry standard considered sound and reasonable at the time of construction turns out not to be fit for purpose

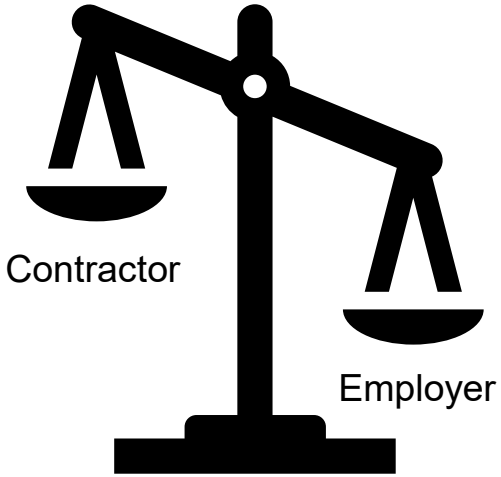
- Examples from case law – MgO roof plates
  - Multiple cases regarding MgO-roof plates in the last decade, cf. e.g. TBB 2017.779, TBB 2018.907 VBA, TBB 2019.369 VBA and TBB 2019.677 VBA
  - Introduced to the Danish market in 2010
  - In December 2013, BYG-ERFA (Danish construction magazine) considered the roof plates as usable
  - In 2015, it was discovered that the plates was unfit to be used due to the Danish weather
  - After December 2013, the MgO-roof plates were commonly considered sound and reasonable
  - The owner/employer carried the risk

State of the art

Fit for purpose



Danish law



Warranty

- Broadly worded warranties are insufficient to shift the responsibility from the owner/employer to the contractor, cf. TBB 2008.701
- Danish courts only recognize that a warranty has been given if the contract provides a ***sufficiently clear legal basis*** that a warranty for a particular result has been provided by the contractor, cf. U1973.675H, TBB 2004.183 and TBB 1999.191
- If a “fit for purpose”-clause is used the wording has to be very precise and clearly worded if it is to be recognized by the Danish courts
    - More likely that a clause providing a specific function will be achieved then a warranty that the construction will have a certain lifetime

MT Højgaard A/S v. E.ON – if Danish law was applied

- MT Højgaard A/S would likely not have been found liable under Danish law
  - The industry standard J101 was widely recognized at the time of construction
  - E.ON. had required the use of J101
  - The wording of “fit for purpose”-clause would probably not be considered sufficiently clear for the Danish courts to find that MT Højgaard A/S had provided a warranty of a lifetime of 20 years

What if the contract is based on a standard form?

- Increased use of standard forms e.g. FIDIC Silver or Yellow Book in Denmark
- Literature (e.g. Axel-Volkmar Jaeger and Gotz-Sebastian Hök):
  "Well accepted that FIDIC forms of contract have a common law background"
- FIDIC standard forms contains fit for purpose-clauses
  - FIDIC's understanding of "fit for purpose" is generally understood to correspond with the understanding of the term under English law
- Standard form is subject to the governing law but it must be taken into account that FIDIC standard forms originates from common law

Fit for purpose obligation in a standard form

- Not unseen that Danish courts assert English law interpretations when assessing matters that are not clarified in Danish law, cf. UfR 2007.1802H, UfR 2017.2023H and FED 2018.04Ø (The SIRI-case).

THE SIRI -CASE:

- The SIRI production-platform, located in the North Sea of Denmark, experienced significant structural cracks
- Lawsuit against insurance providers regarding the ”Sue and Labour” insurance provision – a concept well known in English law but unknown in Danish law
- The Eastern High Court found that the term ”Sue and Labour” must be interpreted in accordance with English case law

The SIRI-criterias

- The Eastern High Court applied the following test:
  1. Is it a specific term unknown in Danish law?
  2. Was the term well established in English law already prior to the parties' agreement?
  3. Are the parties' agreement based on a standard form that originates from English law?

Can FIDIC standard forms fully be considered a standard form that originates from English law?

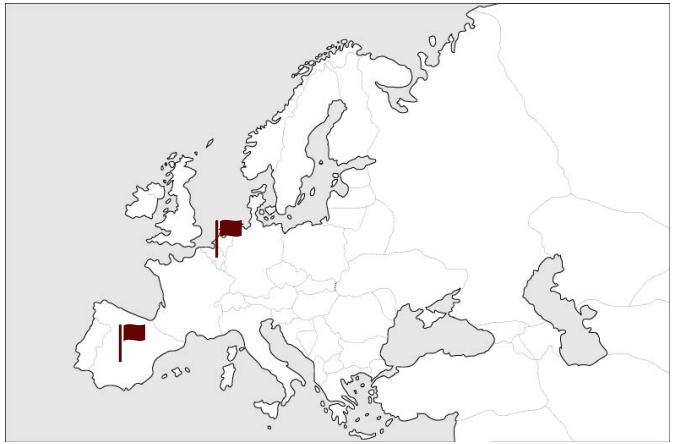
- Danish courts tends to exhibit loyalty to the AB system
- Danish court will probably be reluctant to establish a warranty commitment shifting the risk allocation in the AB system

Insurance coverage?

- Possibility that a “fit for purpose”-obligation will not be covered by a professional indemnity insurance
  - Most professional indemnity insurance policies only covers in the event of negligence
  - Some expressly exclude coverage of a “fit for purpose”-obligation
  - Some may be completely invalidated if the insured has agreed to a “fit for purpose”-obligation
- **Always check insurance policy prior to accepting a fit for purpose-obligation**

Summary

- The use of a ”fit for purpose”-obligation in contracts with Danish law as governing law, creates uncertainty as:
  - “Fit for purpose”-obligations do not have a Danish equivalent
  - It deviates from the risk allocation known in Danish construction law
  - The Danish courts are reluctant to establish a warranty commitment that shifts the risk allocation represented in the AB system unless ***very clear guidance*** have been given to this effect
  - A ”Fit for purpose”-obligation will probably not be given full effect by the Danish courts
- If a “fit for purpose”-obligation is used:
  - The wording must be very clear if the obligation is to have effect
  - Check insurance coverage prior to accepting obligation



08

To boldly go where no man has gone before: prototypes borderline engineering, etc.

Ignacio Santabaya – Frederik Foncke

Pérez-Llorca

ESCL Conference 2024 - Antwerp

18 October 2024

Modular construction: Liability of the construction agents in Spain and a look towards its future

Ignacio Santabaya
Partner – Litigation & Arbitration - Madrid

Index

What is modular construction?

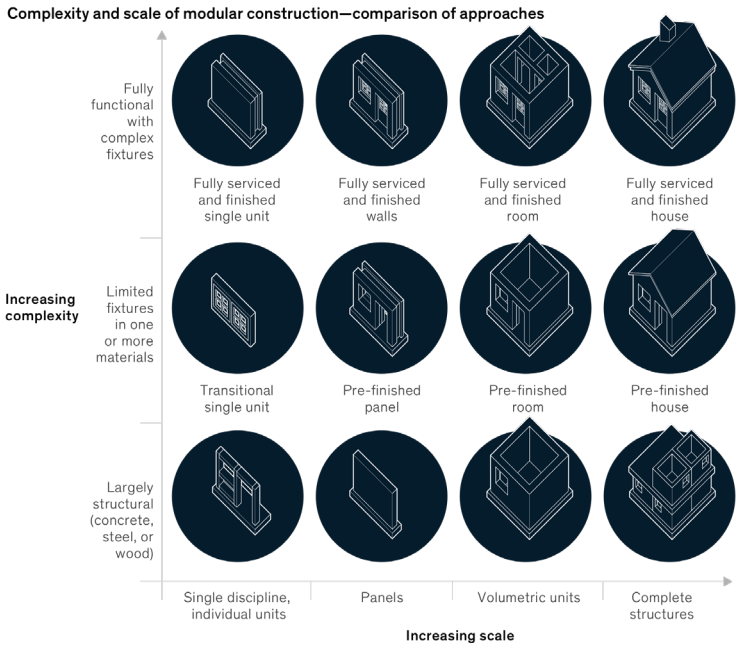
- Modular construction is a process in which a building (or significant parts of it) is constructed off-site, under controlled plant conditions.
- Final goal of the construction:
    - Permanent Modular Construction
    - Relocatable Buildings
- Modular construction can also refer to the production of standardized components of a structure in an offsite factory for them to be assembled onsite. Other terms for this understanding of hte concept would be “offsite construction” or “prefabrication”.

Pérez-Llorca

What is modular construction? (II)

Exhibit 2

Modular construction covers a broad set of approaches.



Source: Case studies; interviews; McKinsey Capital Projects & Infrastructure

Source: "*Modular construction: From projects to products*", McKinsey & Company, June 2019

Pérez-Llorca

Advantages of modular construction

- Greener
  - Factory-controlled process generates less waste
  - Creates fewer site disturbances
  - Modules can be disassembled and reused
- Faster
  - Construction of modular buildings occurs simultaneously with site work (e.g. foundations)
  - Reduction of weather delays
- Increased safety, precision and productivity
- Less demand of skilled construction labour

Pérez-Llorca

Liability under the Spanish Construction Act

Off-site agents

- Developer
- Designer (*proyectista*)
- Building quality control entities and laboratories
- Product suppliers

On-site agents

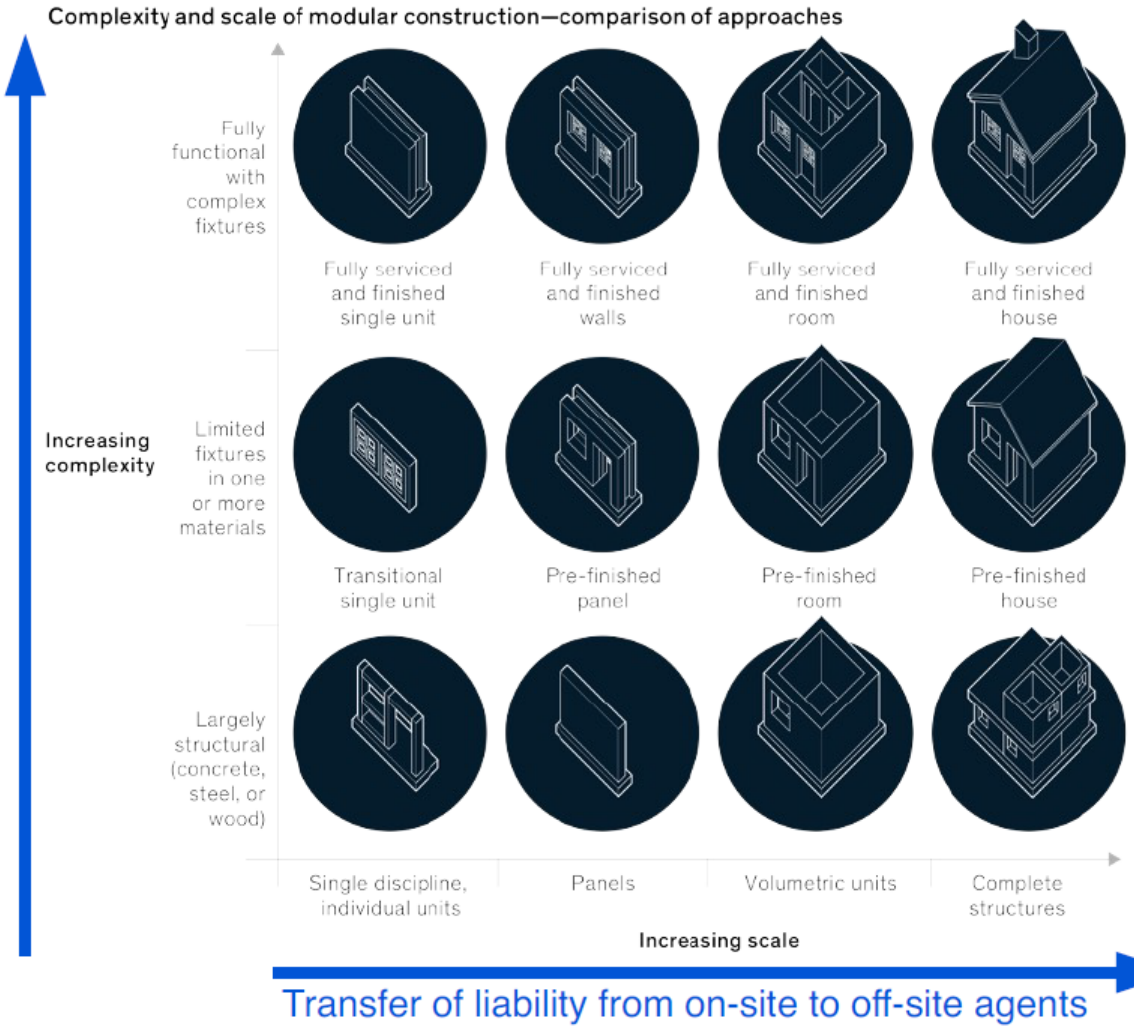
- Construction manager (*director de obra*)
- Project execution manager (*director de ejecución de obra*)
- Constructor

Distribution of liabilities in modular construction

- No specific legal regime
- Origin of the defect: installation or module itself?
- Installation – construction agents on-site
- Module itself
    - Modules are construction products
    - Liabilities corresponding to off-site agents
    - Liabilities corresponding to on-site agents – fairness?

Proposals for an adequate distribution of liabilities

- Contractual approach
    - Separate project for complex modules
    - Rights of inspection before arrival on site (FAT tests)
- Certification approach
    - On-site liability circumscribed to visual inspection and document review
- Legal approach
    - Specific liability regime
    - Mandatory contractual or certification solutions
    - Legal definition of “module” to distinguish it from other construction products



Pérez-Llorca

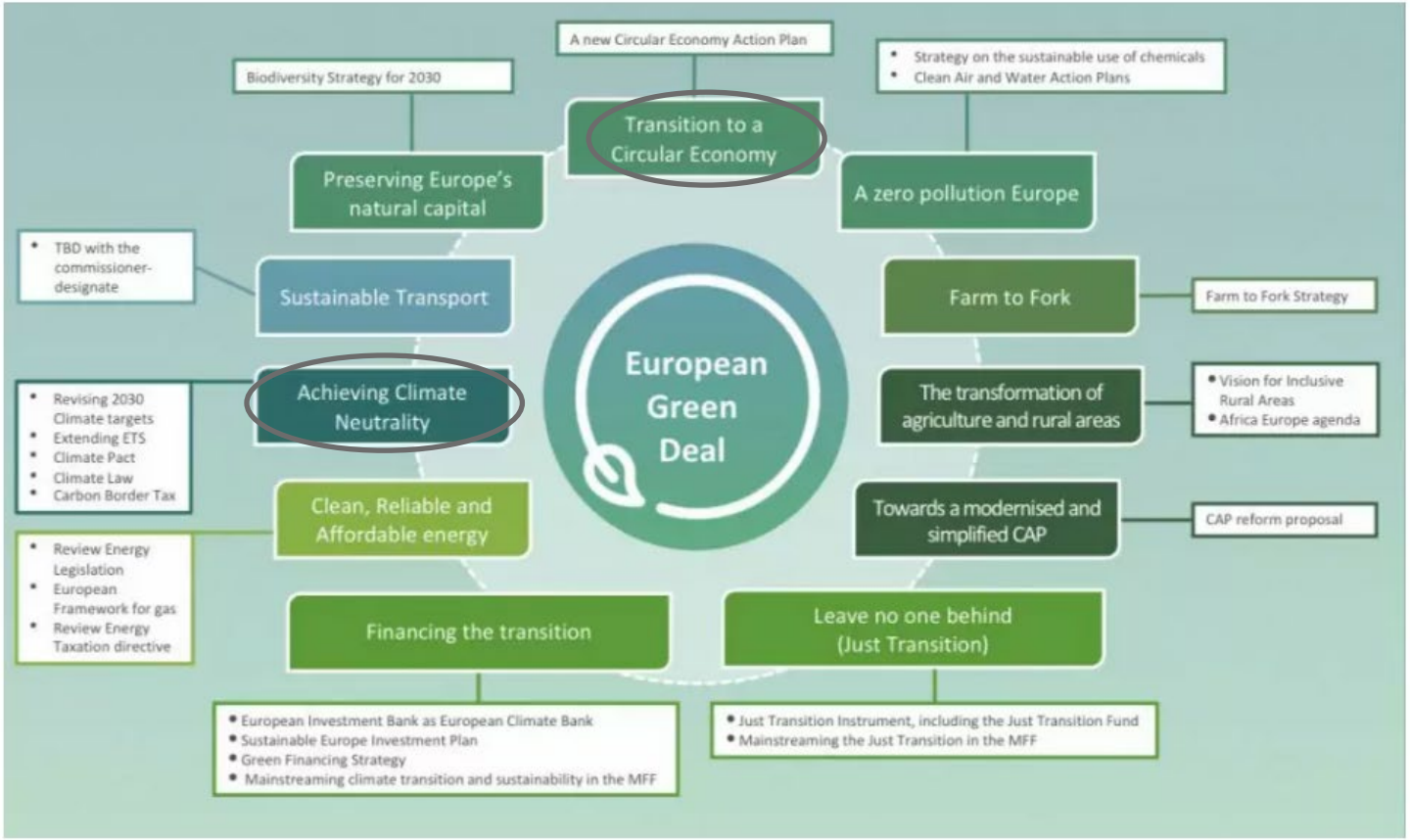
08

Borderline Engineering & Renewables

Ignacia Santabaya – Frederik Foncke

“Confidence and certainty in an innovative construction world”

EU green deal



EU green deal

What's the problem?

- *'The shift to circular construction/ new "green"materials-methods introduces **new risks and uncertainties** that are not fully addressed by traditional insurance models.'*
- Insurers are particularly concerned about the longevity, durability, and quality of reused, recycled or new – green-materials, as well as the potential for **increased liability** and **unforeseen technical issues**.

Why uncertainties?

Lack of information about the quality

and performance of reused materials/ new materials.

No standards, references available to proof quality

Not a clear view of possible risks

Not a clear evaluation of the risks

No clear communication construction team- insurance companies

We enter a grey zone…

Consequences?

- Higher financial risks (will insurance companies intervene?)
- Less quality
- Slower transition to a green society

Solution?

- Research project
  - Architects
  - Contractors
  - Engineering companies
  - Administrations
  - Insurance companies (all present in Belgium)
  - Universities
  - Construction associations
  - SECO (third party control)

5 steps to evacuate this grey zone..

1.Risk identification: what's at stake
2.Quality assurance: how do we define the quality
3.Risk management
4.Define Information to exchange with the insurance companies
5.Evaluate this information

1.Risk identification

What are we talking about?

Product **performances** :

- Standards available
- Technical information
- Tests
- References
- Quality labels
- Certification (CE-mark/EOTA/ BENOR/ATG,…)
- …

Poor info/ nothing available= RISK

Check **Application** requirements:

fit for use

- Outside/inside
- Heavy loads/ no impact..
- …

Application with impact = RISK

2.Quality assurance of risks

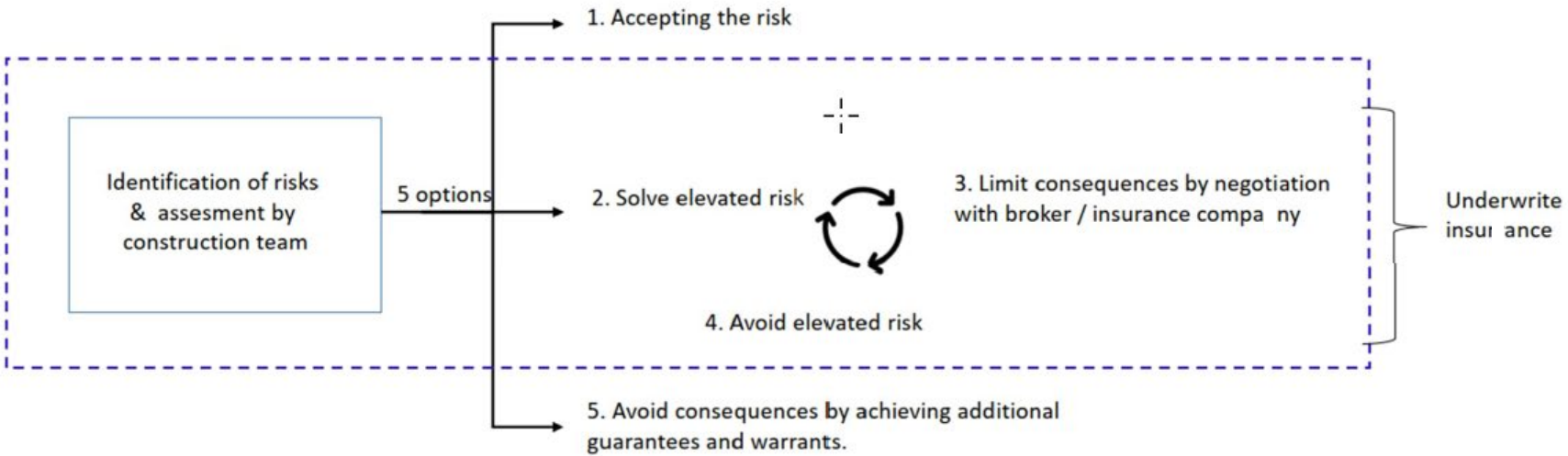
- How we can assure quality of materials (if defined as risk)

- internal contruction team experts
- External experts
- Independent Third parties

- Batch inspections
- Advice-Assesment by experts
- Guarantees suppliers
- Labo tests

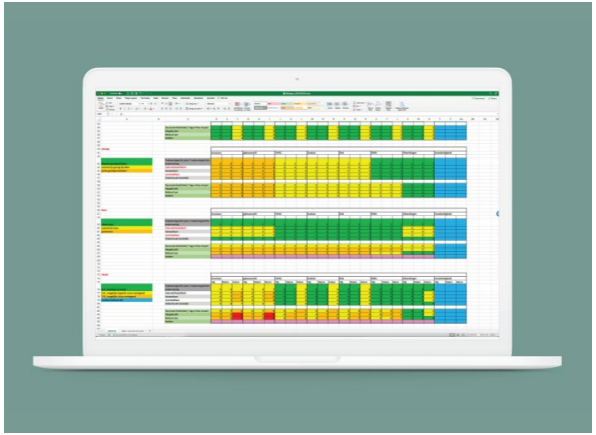
On the long run useful information could lead to certification

3. How to manage risks?



4. information exchange insurance company

- Overview tabel what needs to be exchanged and how?



In's (selection criteria)

- Structure, shell, installations, finishing,…
- Internal / external (third party) evaluation
- Reuse-new materials
- Kind of insurance (Latent Defect Insurance, civil liability insurance, Construction All Risk,..)

Out's (kind of actions)

- Nothing
- Notifications
- To Evaluate/ to discuss with insurance company

5. Evaluation

- Together with insurance company

Taking into account available information (step 2)
What is the **probality**/risk of damage?
If **damage** what will be the **impact**?

Conclusion:

- acceptance
- extra testing
- adaption policy conditions
- refusal

Probability Gravity	4. Painless	3. Limited	2. Serious	1. Dramatic
1. Improbable				
2. occasional				X
3. Frequent			X	X
4. Very frequent			X	X

Better to discuss in advance then we the damage occur without contact insurance compan

Conclusion

Circular construction and the introduction of new “green materials/methods presents both opportunities and challenges for the construction and insurance industries. By **addressing the barriers to insurability**, stakeholders can promote the broader adoption of circular and green construction practices, leading to more sustainable and resilient buildings. The recommendations proposed in this presentation aim to create a more supportive and enabling environment for circular and green construction, encouraging innovation and reducing environmental impact.

Conclusions