Transposition into national law of the new EU public procurement directives and the impact on subsurface construction contracts - the Portuguese case

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AGENDA

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• Application of ITA Contractual Framework Checklist for Subsurface Construction Contracts, in Portugal: Limitations and Opportunities → there is space to improve!
Why?

- **Legislation** and **contractual conditions** are a very important **tool** that all geotechnical engineers should “know by heart”, specially if they are facing some difficult situation in the front face of a tunnel...

- It’s mandatory for all European countries the **transposition of the new EU public procurement directives**, that raises new rules in order to **simplify and flexibly** public procurement procedures

- **Geotechnical risk** is always present when you deal with the inherent uncertainties of geological, geotechnical, hydro-geological and structural performance of the subsurface

- Right now, in Portugal, the revision of the Portuguese Public Contracts Code is concluded, within the transposition of the new EU Directive on Public Procurement (2014/23/EU, 2014/24/EU and 2014/25/EU)

- ... so, there is a **window of opportunity** to implement a new legislative solution that (i) meets the objectives of the new EU Directives on Public Procurement; that (ii) is **tailored to the best construction practices of tunnels and underground works** with high complexity and uncertainty; and thus (iii) allows better risk management (in particular, the geotechnical risk) and that (iv) will probably lead to best value for money and increased safety of these complex geotechnical public underground works.
New EU Public Procurement Directives

- **2014/23** - Award of Concession Contracts
- **2014/24** - Public Procurement
- **2014/25** - Procurement by entities operating in the water, energy, transport and postal services sectors

The three Directives represent a reform of public procurement rules across the EU and **required to be transposed into national law by April 2016.**
New EU Public Procurement Directives

• a key aspect of the new directives concerns the article 72 of the 2014/24/EU directive (modification of contracts during their term)

For instance, concerning additional works (services or supplies which were not included in the original contract) the directive provides considerably more flexibility for contracting authorities in comparison to the previous situation of Directive 2004/18/EC, allowing for a negotiated procedure without prior publication of a contract notice under some conditions:

a) “where the modifications, irrespective of their monetary value, have been provided for in the initial procurement documents in clear, precise and unequivocal review clauses, which may include price revision clauses, or options. Such clauses shall state the scope and nature of possible modifications or options as well as the conditions under which they may be used. They shall not provide for modifications or options that would alter the overall nature of the contract or the framework agreement;”.
Particularities of underground works

- **Dependence on the behaviour of the ground materials**, that cannot be precisely known in the design phase.

- **Uncertainty**, with several causes but we highlight the **geotechnical**, due to the nature of the subsurface soil, and hydro-geological conditions, heterogeneity, previous conditions of over consolidation, the work, ...
Particularities of underground works

• **Tunnel design** is more than a determination of the structural adequacy of component parts - it must meet practical construction requirements to secure economy and safety in a range of ground conditions.

• When an underground structure is built a **redistribution of the natural initial stresses** takes place. Due to this redistribution, the underground structure will be subjected to a certain level of stresses and hence loads that influences adjacent structures.
Particularities of underground works

- The best contractual practices in countries with great tradition in this type of complex geotechnical works promote the adequacy of the construction methods initially planned to the real ground conditions and behaviour found at tunnel face.

- For instance, by using the observational method (as set out in Chapter 2.7 of the Eurocode 7: Geotechnical design) in which the design is reviewed during construction.

- Therefore, it’s recommended the use of flexible legislative solutions adapted to this reality, which follow the best construction practices, and allow a better management of the geotechnical risk allocation.
The Portuguese case: Reform of Public Procurement Code

• **Timescale** for transposition of the new EU public procurement directives in Portugal:

- **Legal transposition period of EU Public Procurement Directives**
  - Directives 2014/23/EU; 2014/24/EU; 2014/25/EU
  - Directive 2014/55/EU
    - 16/4/2014

- **Extension period for transposition (and reform of PPC) in Portugal**
  - 17/4/2016 - 31/8/2017

- **Adaptation period before new PPC becomes mandatory**
  - 31/8/2017 - 1/1/2018
  - DL 111-B/2017; transposition in Portugal
  - 31/8/2017

- **End of legal transposition period for EU members**
  - 17/4/2016

- **New Portuguese PPC becomes mandatory**
  - 1/1/2018

- **Today: 7 May 2019**
  - transposition in Portugal
  - 31/8/2017
The Portuguese case: Reform of Public Procurement Code

- **Since January 1\textsuperscript{st} 2018** the use of revised PPC is mandatory in Portugal.

- Portuguese Commission on Tunnelling and Underground Space (CPT) has **submitted some contributions** to the legislator, in order to facilitate the access to the **best contractual practices in underground construction**, taking into account the rules of the new European Directives and the international experience in other countries and organizations like ITA:

  ✓ i) The new directives reinforce the possibility of creating more flexible contractual arrangements, based on the rules on contract’s modification during their term. They are more open to adaptation to real ground conditions encountered during excavations in the case of complex geotechnical works, **if those modifications are clearly provided for in the initial procurement documents** [article 72(1)(a)]. This opens the possibility of considering **different design scenarios for ground conditions** and characteristics with different probability of occurrence.

  ✓ ii) CPT proposed a new type of modifications to the contract during their term, called **Special Modified Works (SMW)** that can occur due to modifications of the construction method on site as a consequence of the information obtained during excavations, **for a scenario different than the baseline**, and that can result in additional or less works (considering the baseline construction plan which was based on the most probable scenario for expected ground conditions).
Reform of Portuguese PPC: Window of opportunity!

- **Special Modified Works (SMW)** can be used when the project is made for different scenarios:
  - The baseline ground conditions, that sets out the contractual limits of the most probable conditions believed to be encountered during construction, thus providing clear distinctions in the contract documents between expected and unexpected underground conditions, sustains the design baseline scenario (scenario A), for which the excavation and construction should be designed;
  - The design must also contain two other possible design scenarios, although with less probability of occurrence, and anticipate the construction methods and the appropriate technical solutions to respond to i) a situation with worst geotechnical conditions (scenario B) and ii) another situation with more favourable geotechnical conditions (scenario C) than the baseline scenario;

More contractual flexibility for technical adjustments during construction!
Reform of Portuguese PPC: Window of opportunity!

• But more flexibility during construction requires accurate preparation!

**Preparation of the tender**
- Appropriate Site investigation
- Geotechnical Baseline Report
- Differing Site Conditions
- Design for several scenarios
- Revision by experts
- Balanced risk allocation

**Execution / Construction phase**
- Special Technical Assistance (STA)
- Monitoring
- Special Modified Works (SMW)
- Formal risk management procedures
- Site supervision specialists
- Dispute Resolution Board
When uncertainty is certain, what’s the right thing to do?
Reform of Portuguese PPC | Window of opportunity | SMW

- Revision of CCP: SMW
- STA Monitoring
- New Directives
- Design for #s scenarios
- Observational Method
- Geotechnical Uncertainty
- Risk Management

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Application of ITA’s recommendations on contracts for UW, in PT: Limitations and Opportunities
Application of ITA’s recommendations on contracts for UW, in PT: Limitations and Opportunities

ITA has already prepared guidelines and recommendations on contractual aspects of conventional tunnelling (WG19) and **contractual framework checklist for subsurface construction contracts (WG3)**, that resumes the state of art for contractual purposes on subsurface projects:

- **Allocation of risk** – Ground and groundwater related risks should be assigned to the owner, the party that can best control these risks. Performance related risks arising from expected ground conditions should be assigned to the contractor

- Disclosure of all available geological and geotechnical information, and inclusion of a **contractual geotechnical baseline** – reference to determine allocation of risks

- "**Differing site conditions**" clause - allocates to the owner the risk if actual conditions turn out to be materially different from expected conditions, and provides a qualitative and quantitative procedure (financial and technical) by which the contractor can apply for and obtain an equitable adjustment for unforeseen site conditions.
Application of ITA’s recommendations on contracts for UW, in PT: Limitations and Opportunities

- Provisions of a **flexible mechanism for remunerating according to ground conditions:**
  - A **unit price contract payment system** for items that are affected by ground and groundwater conditions should be used. The unit price structure should be organized to facilitate the distinction between fixed costs, time-related costs, value-related costs and quality-related costs

  **BUT...**

  It’s **difficult/impossible to apply these principles and recommendations in Portugal, taking into account the new revised Code: the use of unit price contract is prohibited** .... for now!
Conclusions

• This is a period of transition to the "new" national legislation on public procurement, in Portugal and also in the other EU countries, due to the necessary transposition of the public procurement Directives.

• It will require an adaptation of all the stakeholders and, hopefully, an improvement of the contractual practices of this type of complex underground geotechnical works, especially the tunnels.

• The current Portuguese legislation does not respond properly to the best construction methods for tunnels, specially in complex geotechnical conditions with unforeseen circumstances.

• The lack of flexibility of the legislation, and of the court of auditors, collides with the necessary flexibility of the observational method, that is founded on the adjustment of techniques according to the conditions encountered in the front face of excavation.
Conclusions

• BUT with a **more rigorous preparation and high contractual flexibility**, using the state of art guidelines on contractual aspects for underground structures (in particular for tunnels) given by ITA recommendations and other standard contract conditions (FIDIC, ...)

• **Balanced risk allocation** and **effective management** of underground projects, essential for the successful completion of the works, on the right schedule and at a fair price

• This will only be possible if the Portuguese legislator understands the **particularities of the subsurface environment and underground works** and take the opportunity of the revision to introduce the necessary adjustments to the Portuguese Public Contract Law for this particular complex geotechnical structures (**design for different scenarios, Special Modified Works, Risk management procedures,**...)

• **AND, until we can’t use unit price contracts** in Portugal, we can use a **“scenario” price contract**!
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