Tony Gee
Consulting Engineers

WG25 Constructability

Workshop February 2020,

Workshop 10:00 – 16:30

- 10:00 – 10:30 Introduction
- 10:30 – 11:30 Split into 3 groups and discuss constructability
- 11:30 – 12:30 Report back
- 12:30 – 13:30 Lunch
- 13:30 – 14:30 Split into 3 groups and review JTs first draft
  - What needs to be added now
  - What should be added in second revision
- 14:30 – 15:30 Report back
- 15:30 – 16:30 Actions

If possible, each group should have 1x Client + 1x Arc/PW + 1 Contractor + 1x TW + 1x specialist

Aims of the Working Group

- Produce a guidance document
- For Clients, Architects, Permanent Works Designers, Temporary Works Designers and Contractors
- Covering the constructability of Permanent Works and the associated Temporary Works
- Aims to improve safety, reduce carbon content and reduce costs

Participants

- Clients
  - Chris Maher, *Highways England*
  - Steve Williams, *Network Rail*
- Permanent Works Designers
  - Tim Bowes, *Atkins*
  - Andrew Finch, *Jacobs*
  - John Winson, *Atkins*
- Contractors
  - Nick Boyle, *Balfour Beatty*
  - Aleksander Widernik, *Lendlease Construction*
  - Rob Williams, *Murphy Group*
  - Paul Boddy, *Interserve Group*
- Temporary Works Designers
  - Tim Lohmann, *Wentworth House Partnership*
  - Malachy Ryan, *Alan White Design*
  - Jim Tod, *Tony Gee*
- Independent Temporary Works Specialists
  - Chris Bennion
  - David Thomas
  - Mike Webster
- To be confirmed
  - Transport for London
  - Knights Architects
  - Arcadis

Timetable

- Stage 1
- December 19/January 20 – Appoint members, background work
- February 20 – Workshop
- April 20 – First draft, issue, obtain comments
- June 20 - Redraft,
- July/August 20 - Publish
- August 20 - Decide what else needs to be done
- Plan Stage 2

What the guidance should cover

- Introduction,
- Client perspective
- Arch/PW perspective
- Contractor perspective
- TW perspective
- Examples good and bad – if everyone brought 1 of each we'd have enough
- Presentation information – PowerPoint Slides
- Recommendations
- Future research

- What is constructability?
- Can constructability be measured? – if so How?
- What affects constructability?
- How the Client choices affect the Permanent works design?
- How the Client choices affect construction methodology and temporary works?
- How the Architect and Permanent Works designer's choices affect construction methodology and temporary works?
- How the Contactor (and Temporary Works designers) can affect constructability?

BS 5975:2019

8.3 Permanent Works Designers

8.3.1 Permanent works designers should address the buildability of the permanent works and identify, and make provision for, any temporary works and temporary conditions required by their design and their assumed method of construction. This should include:

a) a proposed method and sequence of construction which should have no adverse effects on the permanent works;

b) deciding on and communicating the intended construction process, giving particular attention to new or unfamiliar processes;

c) considering the stability of existing structures and partially constructed/erected/ demolished structures and, where this is not immediately obvious, providing information to show how temporary stability could be achieved;

d) identifying where standard industry details are not suitable, and where detailed structural design is to be carried out by others;

e) considering the effect of the proposed work on the integrity of adjacent/existing structures, particularly during refurbishment;

f) ensuring that the overall design takes account of temporary works which might be needed, no matter who is to develop those works;

g) ensuring that consideration has been given to the availability of sufficient space required to construct or maintain the structure; and

h) clearly stating loads for which the structure has been designed including the proposed plant installation loads and plant routes.

Unless the designer is a construction expert he is unlikely to have thought of the optimum method of construction. The Contractor will always be able to improve on it

Constructability score

- Options and feasibility- red line boundary cost possessions program
- Working room
- Form: Leaning, Overhanging, Unsupported
- Programme
- Third parties – possessions, space, restrictions
- Demolition/removal of existing structures

Future research

- Research into accidents
  - Use database from PDWG for investigating safety?
  - Get specific data from industry?