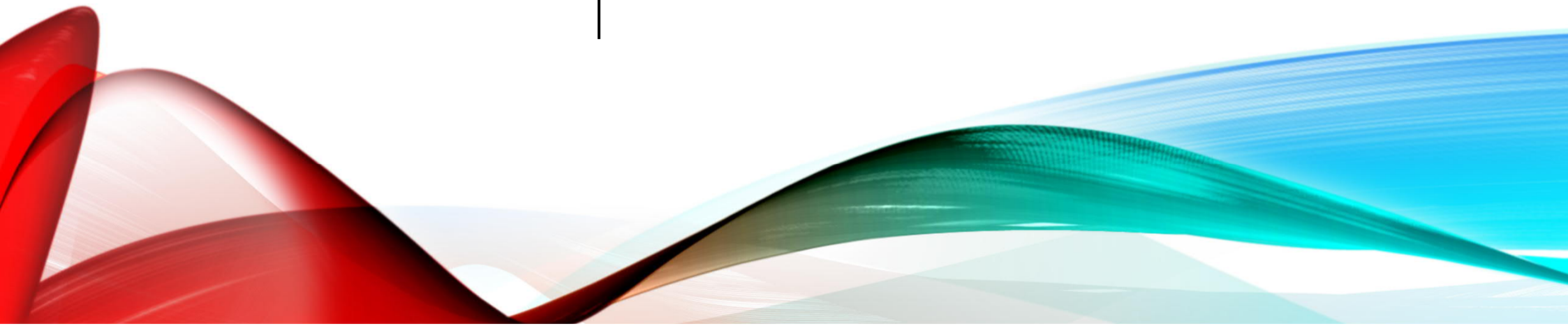
Achieving Attributes and Demonstrating Competence

Presentation by Yvonne Ainsworth

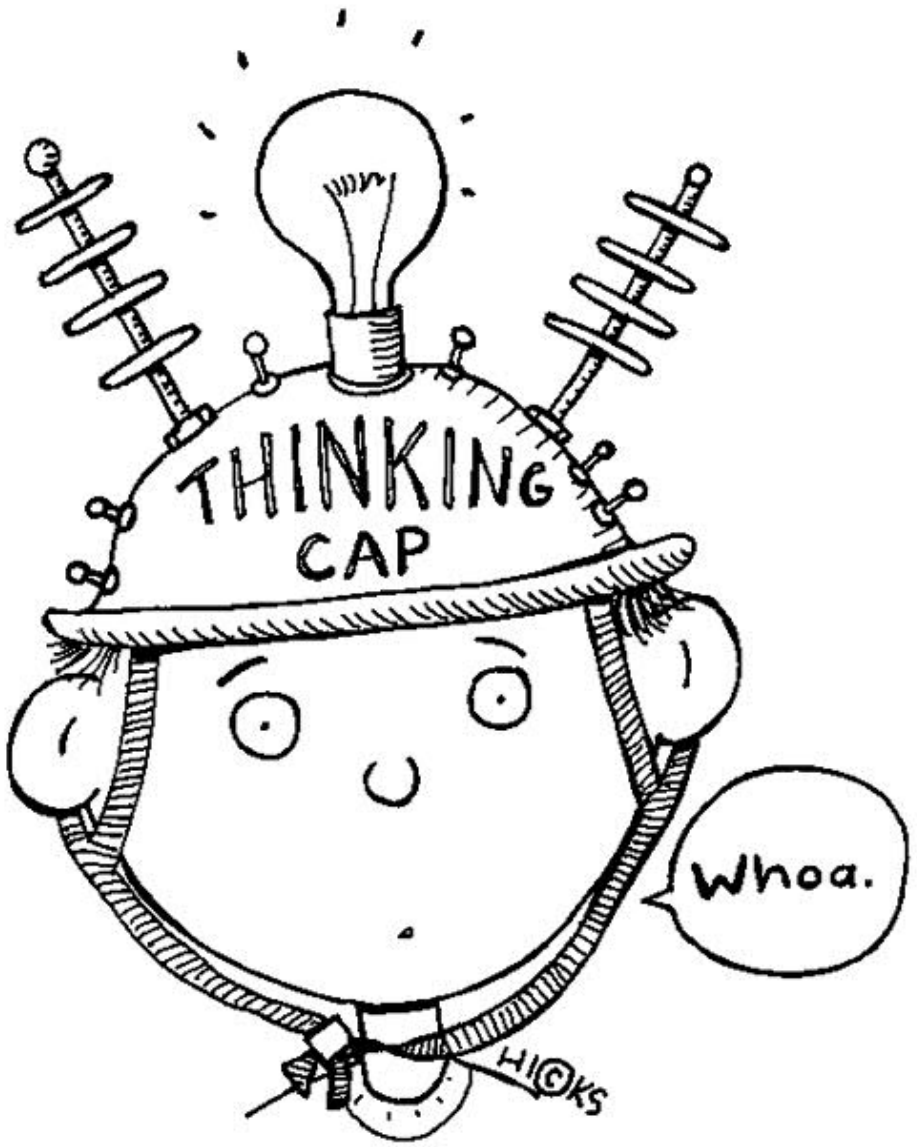
20th February 2019

Or the most daunting event of your career so far

THE ICE PROFESSIONAL REVIEW



ENGINEERING…



PROFESSIONAL REVIEW GUIDANCE

ATTRIBUTES

1. Knowledge and understanding of engineering
2. Technical and practical application of engineering
3. Management and leadership
4. Independent judgement and responsibility
5. Commercial ability
6. Health, safety and welfare
7. Sustainable development
8. Interpersonal skills and communication
9. Professional commitment

ATTRIBUTES

Attribute group	Attributes of CEng MICE to be demonstrated at Chartered Professional Review (CPR)	
	Attributes of MICE/IEng MICE to be demonstrated at Member Professional Review (MPR)	Additional Attributes of CEng MICE to be demonstrated, if you are already IEng MICE, at Chartered Professional Review Progressive (CPRP)

1. KNOWLEDGE AND UNDERSTANDING OF ENGINEERING

1. Knowledge and understanding of engineering	**A**	Maintain and extend a sound theoretical approach to the **application** of technology in engineering practice.	**C**	Maintain and extend a sound theoretical approach in **enabling the introduction and exploitation** of new and advancing technology.
	B	**Use** a sound **evidence**-based approach to problem solving and be able to **contribute** to continuous improvement.	**D**	**Engage** in the **creative** and **innovative** development of engineering technology and continuous improvement systems.

1. KNOWLEDGE AND UNDERSTANDING OF ENGINEERING

Basic expectations:

- Fundamental engineering principles such as forces and bending moments
- Geotechnical theory

Evidence:

- More than just a list of projects
- Demonstrate that YOU have done the calculations
- If confronted with a different scenario, explain what YOU would expect to happen.

2. TECHNICAL AND PRACTICAL APPLICATION OF ENGINEERING

2. Technical and practical application of engineering	**A**	**Identify**, review and select techniques, procedures and methods to undertake engineering **tasks.**	**D**	**Conduct** appropriate research, relative to design or construction and appreciate its relevance within own area of responsibility.
	B	**Contribute** to the design and development of engineering solutions.	**E**	Undertake the design and development of engineering solutions and **evaluate** their effectiveness.
	C	**Implement or construct** design solutions and **contribute** to their evaluation.	**F**	Implement or construct design solutions and evaluate their effectiveness.

2. TECHNICAL AND PRACTICAL APPLICATION OF ENGINEERING

Basic expectations:

- How does the design of a structure influence the buildability?
- Examples of where YOU have come across engineering problems and how YOU solved them.

Evidence:

- Changes of construction sequence and its effects
- Different construction methodologies, such as deep vs shallow foundations
- Detailed design drawings
- Bending schedules
- BIM

3. MANAGEMENT AND LEADERSHIP

3. Management and leadership	**A**	**Plan** for effective project implementation.	**E**	Plan, **direct and control** tasks, people and resources.
	B	**Manage** the planning and organisation of tasks, people and resources.	**F**	**Lead** teams and develop staff to meet changing technical and managerial needs.
	C	**Manage** teams and develop staff to meet changing technical and managerial needs.	**G**	Demonstrate **continuous improvement** through quality management.
	D	**Manage** quality **processes**.		

3. MANAGEMENT AND LEADERSHIP

Basic expectations:

- Understand your management style
- Know the difference between management and leadership

Evidence:

- How have YOU handled a difficult situation?
- How do YOU deal with underperformance?

4. INDEPENDENT JUDGEMENT AND RESPONSIBILITY

4. Independent judgement and responsibility	**A**	Identify the limits of **personal** knowledge and skills.	**C**	Identify the limits of a **team's** skill and knowledge.
	B	Exercise sound **independent engineering judgement** and take responsibility.	**D**	Exercise sound **holistic independent judgement** and take responsibility.

4. INDEPENDENT JUDGEMENT AND RESPONSIBILITY

Basic expectations:

- Understand the limitations of your own knowledge.
- Ability to contribute to discussions
- Ability to express an opinion

Evidence:

- When did YOU have to make a decision without any backup?
- Did YOU ever make a wrong decision and what did you do about it?

Can I trust this candidate to make the right decision in the future?

5. COMMERCIAL ABILITY

5. Commercial ability	**A**	**Prepare** and control budgets.	**C**	Demonstrate **sound judgement** on statutory, contractual and commercial issues in relation to your area of responsibility
	B	Use **sound knowledge** of statutory and commercial frameworks within own area of responsibility and have an appreciation of other commercial arrangements.		

5. COMMERCIAL ABILITY

Basic expectations:

- Understanding of contractual arrangements that you have worked under
- Alternative forms of contracts
- Preparation of budgets/fees
- Managing resources
- Application for payments
- Variations

Evidence:

- Can YOU think of a different contract that would have been better?
- How can the form of contract effect the outcome of a project?

6. HEALTH, SAFETY AND WELFARE

6. Health, safety and welfare	**A**	A **sound knowledge** of legislation, hazards and safe systems of work.	**D**	**Leading** continuous improvement in health, safety and welfare.
	B	**Manage** risks.		
	C	**Manage** health, safety and welfare within own area of responsibility.		

6. HEALTH, SAFETY AND WELFARE

Basic expectations:

- Knowledge of HSE legislation, e.g.
  - ✓Health and Safety at work act 1974
  - ✓Construction, Design and Management (CDM) Regulations 2015
  - ✓Loler
  - ✓Puwer
- Method statements
- Risk assessments

Evidence:

- How have YOU contributed to improving health and safety?

7. SUSTAINABLE DEVELOPMENT

7. Sustainable development	**A**	A **sound knowledge** of sustainable development best practice.	**C**	**Leading** continuous improvement in sustainable development.
	B	**Manage** engineering activities that contribute to sustainable development.		

7. SUSTAINABLE DEVELOPMENT

Basic expectations:

- The 3 pillars
- Holistic approach to engineering

Evidence:

- How have YOU contributed to making a project more sustainable?
- How have YOU dealt with affecting people's life with your design/project/demands?

8. INTERPERSONAL SKILLS AND COMMUNICATION

8. Interpersonal skills and communication	**A**	**Communicate** well with others at all levels including effective use of English (2) orally and in writing.	**E**	Communicate new concepts and ideas to **technical and non-technical colleagues** including effective use of English (2) orally and in writing
	B	**Discuss** ideas and plans competently and with confidence.		
	C	Effective personal and social skills.		
	D	**Manage** diversity issues.		

8. INTERPERSONAL SKILLS AND COMMUNICATION

Basic expectations:

- Ability to talk to people of all levels
- Engaging with 3rd parties
- Leading negotiations

Evidence:

- Conflict resolution
- Convincing someone that YOU were right and they were wrong
- Commercial letters

9. PROFESSIONAL COMMITMENT

9. Professional commitment	**A**	Understanding and compliance with the ICE Code of Conduct.
	B	Plan, carry out and record CPD and encourage others.
	C	Engage with ICE activities.
	D	Demonstration of appropriate professional standards, recognising obligations to society, the profession and the environment.
	E	Exercise responsibilities in an ethical manner.

9. PROFESSIONAL COMMITMENT

Basic expectations:

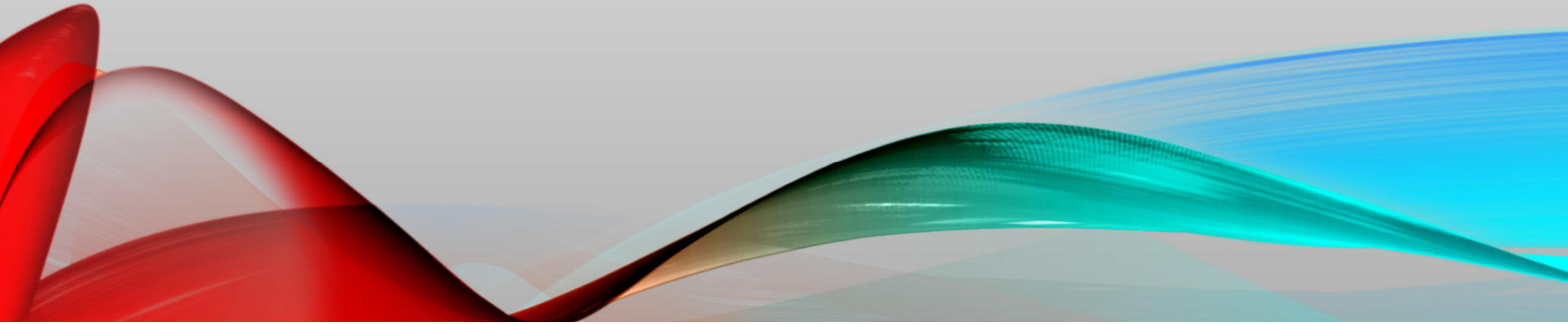
- Attend ICE/BGA/BTS meetings
- Maintain CPD record
- ICE code of conduct

Evidence:

- Membership of committee
- STEM ambassador

THE ULTIMATE QUESTION…

What will happen at the interview?



EXPECTATIONS

YOUR expectations:

1. To be eaten alive
2. To face a lot of tricky and mean questions

OUR expectations:

1. Keep calm and smile!
2. Listen to the question that you are being asked!
3. Answer that question. Don't try to avoid answering it because you don't know.
4. Ask if you don't understand something.

OUR responsibility:

- To gather evidence of how you have fulfilled all attributes.

BGA ECG

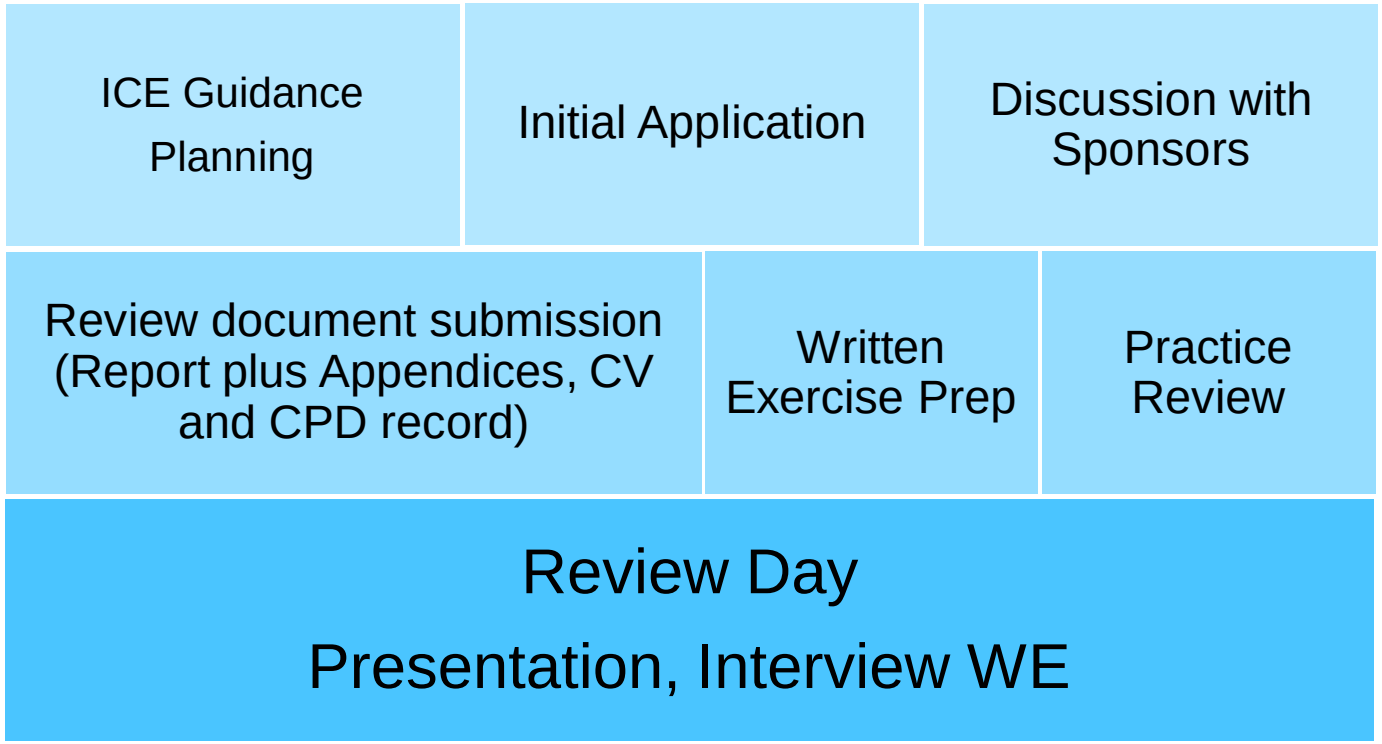
ICE CPR for Geotechnical Engineers

Review day tips and hints

Alison Graham

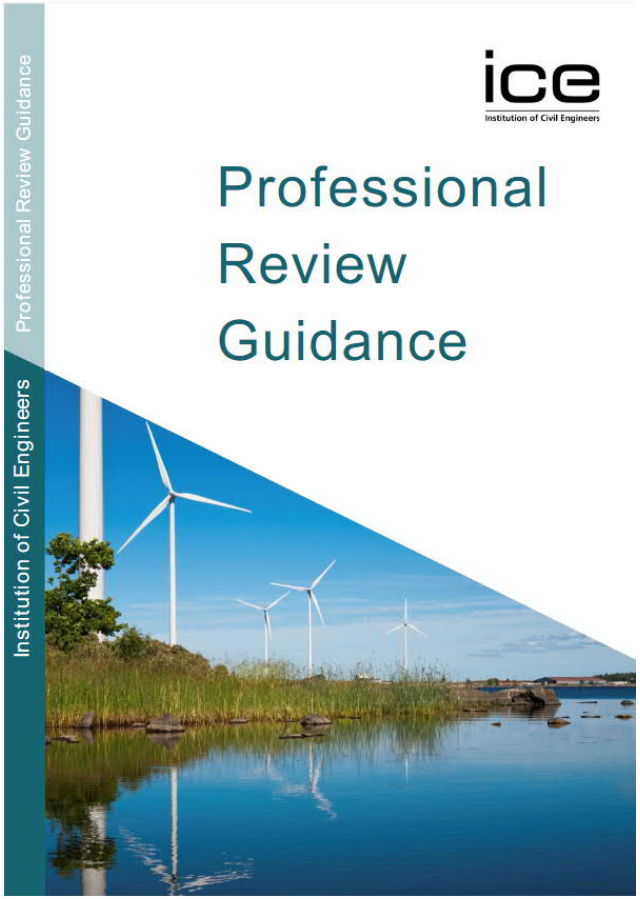
Review Process

Summary



ICE Guidance

- Step 1 Download and read ICE Guidance.
- Have a plan
- Set aside time to prepare application forms and submission documents



Typical plan timeline

Action	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Sign off by SCE and MDO												
Contact Sponsors												
First draft of report												
CPR Application submission							19th					
WE practice												
Complete CPD and DAP												
Finalise Report												
First draft of Presentation												
Practice review												
Submission of documents												
CPR Day									20th to 30th	1st to 17th		
Results Day												

Initial Application

Meet with your regional MDO and SCE

- Sign off Training
- Will be busy as will have other potential candidates to see.
- Find out if they will be visiting your office or nearby office.
- Arrange meeting in good time (i.e. well before application deadline)

Discussion with Sponsors

Sponsors

- Lead Sponsor is typically your SCE
- Needs to shows this on sponsor form and sign 1 page summary
- Contact and have initial discussion with other 2 sponsors
- Again with sufficient time to allow them to complete the sponsor forms.

Review Submission
Report

- How you have achieved the attributes. Note 5000 word limit
- What you did/decisions you made/your responsibilities
  - Use pictures and diagrams, check what they show
  - Check/review by others
- Your first point of contact with your reviewers.
  - Use document to shine and impress your reviewers
  - Poor documentation can give a wrong first impression

Review Submission
Appendices

- Three A3 drawings – provide annotations/explanations. Use colour to add interest
- 12 A4 sheets – think about what they show
- Hand calcs with sketches or simple spreadsheets again use annotation
- Show off your work.
- Show judgement, ground model, material parameter selection
- Type of analysis selected.
- Explain decisions you made
- Risk Assessments for design element
- EG’s Commendations/Programme for GI/claims process

Review Submission

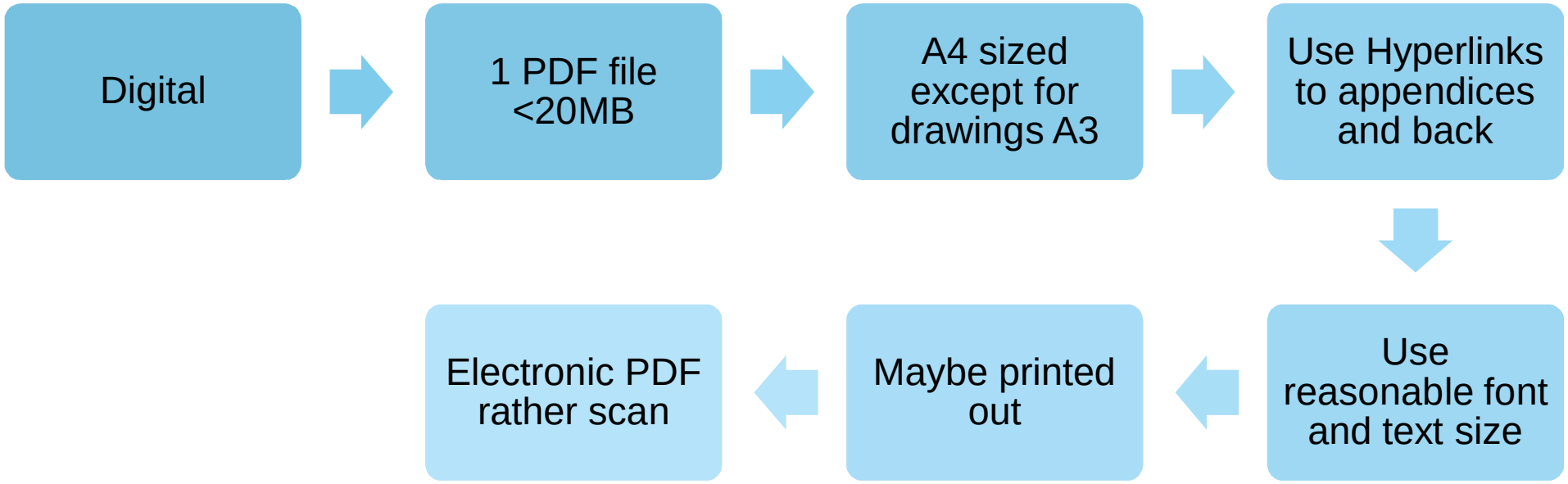
CV

- Additional to 5000 words, 2 pages
- Allows you to set the scene on projects i.e. value/your role and responsibilities. Show progression
- Use it wisely to add value to your submission

CPD

- Records for min. of 3 years 30h/year. Show variety
- Include attendance at ICE/BGA/Geol Soc meetings (shows Professional commitment)
- Also include STEM/Voluteer work/Committees as well as training course
- Include DAP for at least current if not forthcoming year

Review Submission



Review Day - Preparation

- Mock Review
- Practice Presentation.
- Re read reports and appendices
- Visit venue beforehand
- Dress as you would to meet a client
- Arrive on time
- Relax

Review Day - Presentation

- How you will present (laptop or flip chart
- Approx. 8 to 10 slides, use pictures and diagrams
- Don’t regurgitate your report
- Keep to time
- Shows off your communication & Interpersonal skills

Review Day - Interview

- Start with questions on your presentation
- Will lead on to questions arising from your report and any attributes not fully demonstrated
- Will cover all attributes
- Process is audited and consistent
- May ask what you would do differently

Review Day – Written Exercise

- 2 questions set based on your report/sponsors questionnaires, you answer 1
- Good first draft
- Laptop or hand written
- Want to see your opinion, how your present an argument and use evidence to back up
- Only 2 sides of notes now allowed

SNC·LAVALIN ATKINS Member of the SNC-Lavalin Group

Results

- Reviewers will make a decision on the day
- Evidence to back up decision made submitted for review and audit
- Results sent Dec or June depending on when you sit
- Appeal???

GOOD LUCK

Any Questions

SNC·LAVALIN

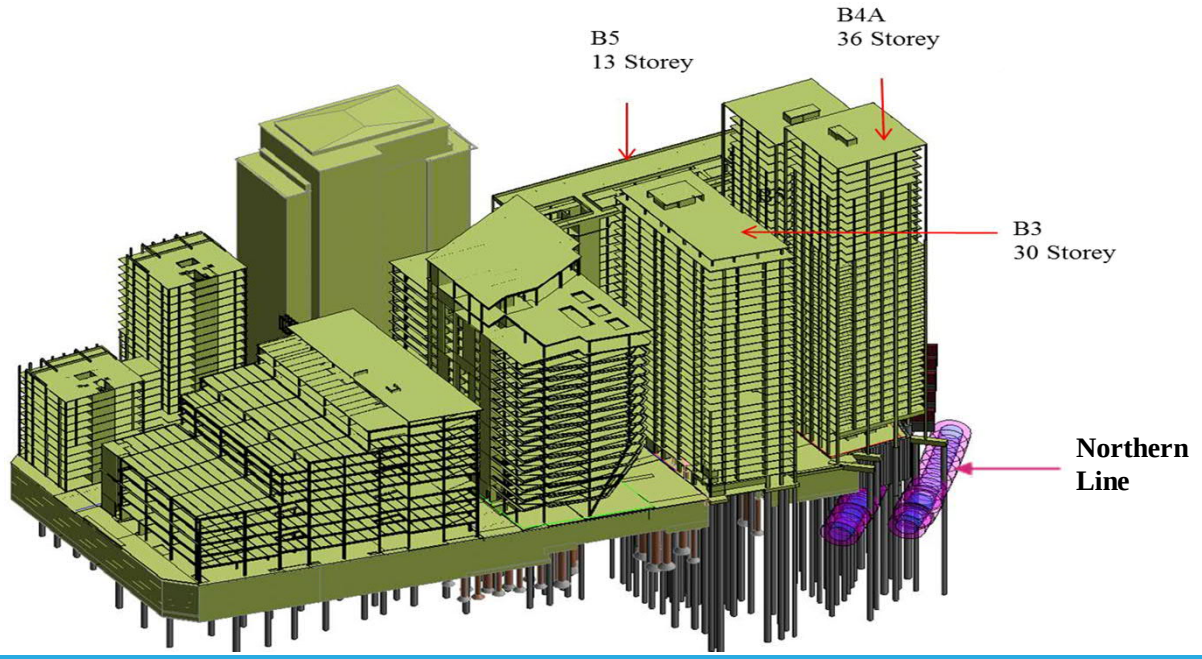
ATKINS
Member of the SNC-Lavalin Group

Chartered Professional Review Presentation

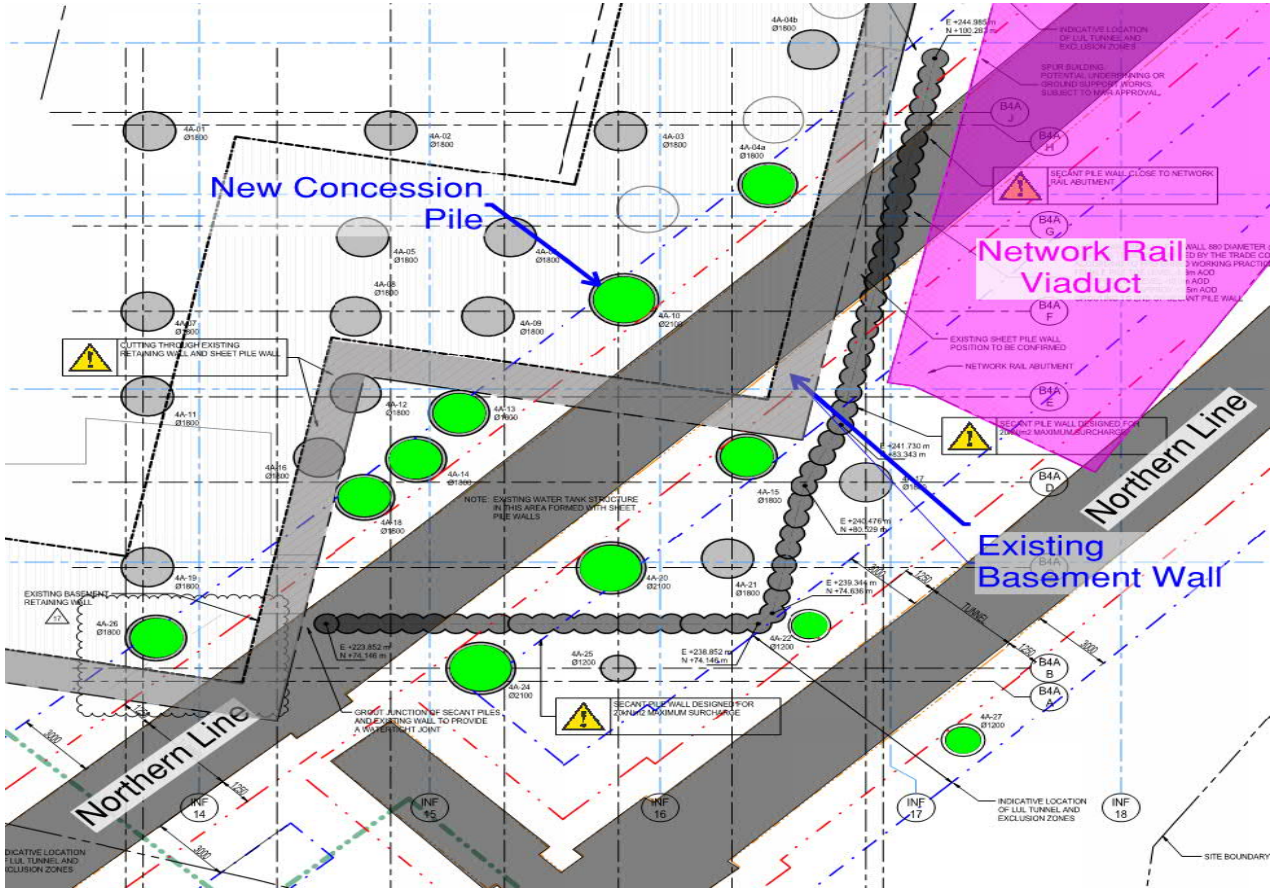
Thomas Beales Ferguson
Spring 2019

Contents

- Site overview
- Installing piles close to London Underground tunnels
- Trials and monitoring



Concession Piles



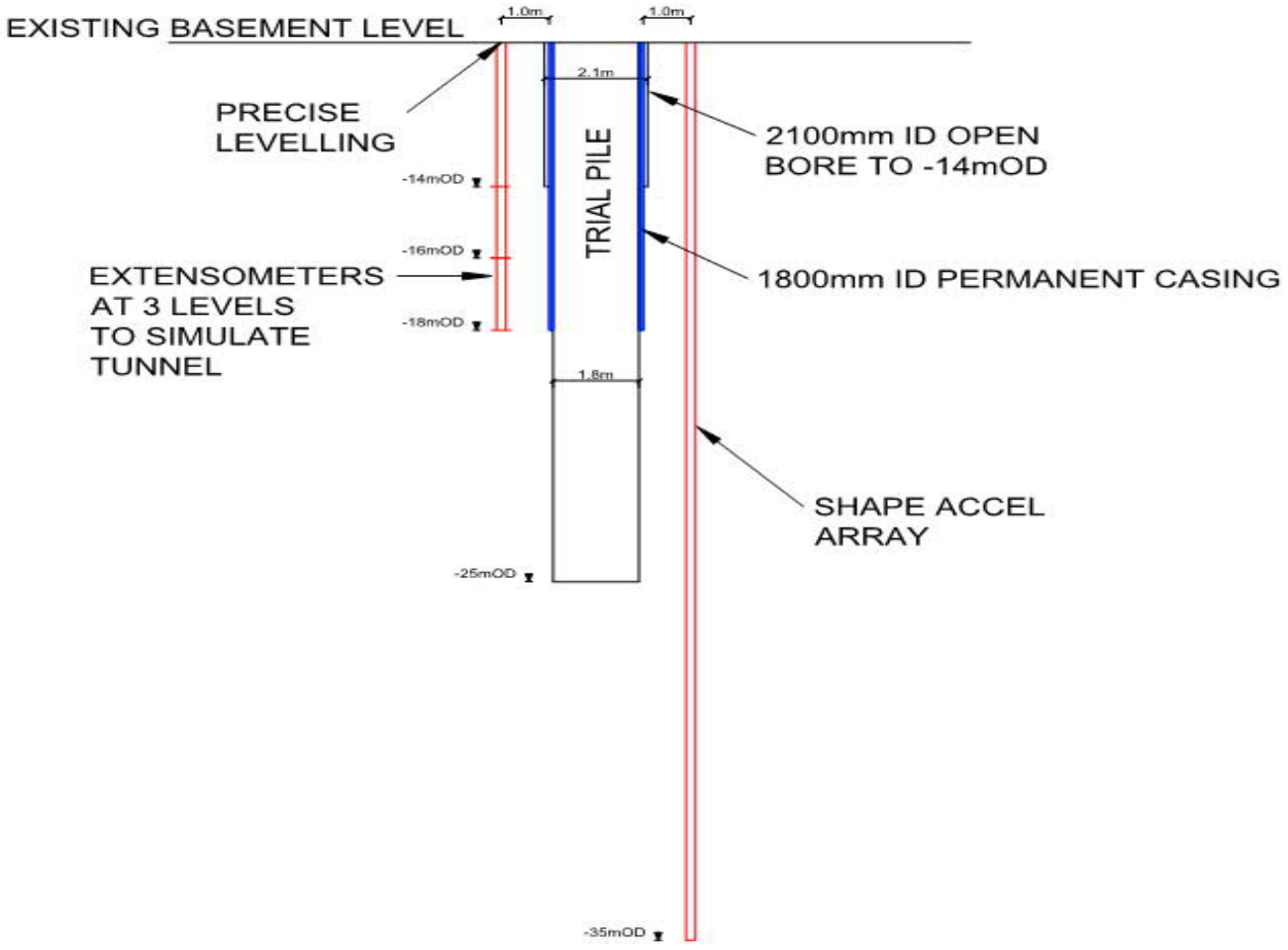
Thanet Sand piles around Northern Line

Piles 1m from LUL

Concession required

~£70m additional floor space

LUL Concession Trial Pile

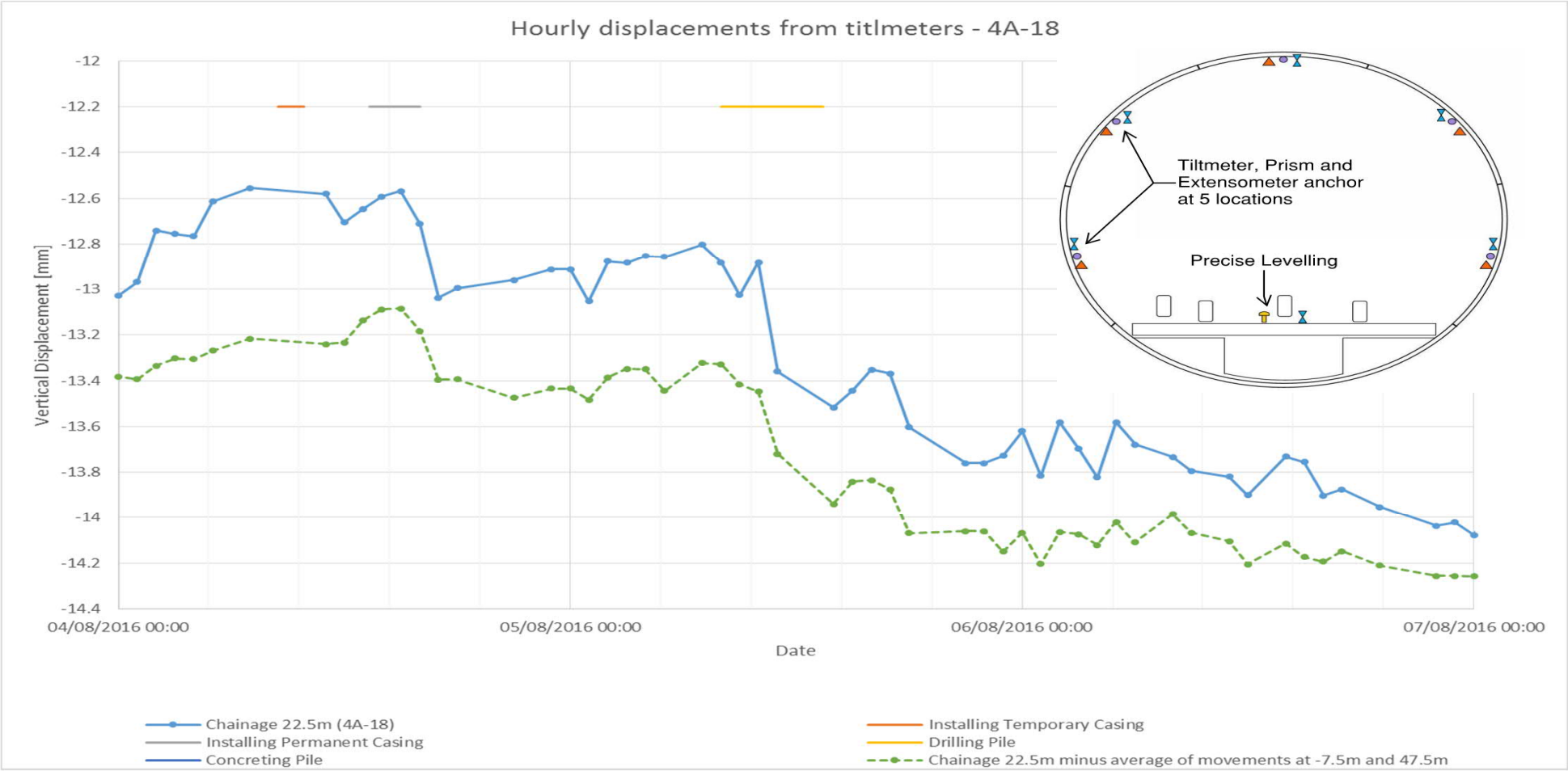


- Distant to LUL tunnel
- Simulates installation methodology
- Movement monitoring in boreholes

LUL Concession Piles

[Photo Removed]

In-Tunnel Monitoring Analysis



Conclusion

- My contribution
  - Proved and developed a method to pile within 1m of running tunnels
  - Gained trust of LUL
  - Coordinated site activities where required
  - Reviewed monitoring
- Lessons learnt
  - Deal fairly with people and good working relationships can be maintained even when things go wrong

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Future BGA Evening Meetings

(details on BGA Website)

Date	Title	Speaker	Bar Sponsor
5th March 2019	50th Cooling Prize Competition Papers competition for young ground engineers with a keynote lecture by Howard Roscoe (winner of the first Cooling Prize) on "HS1 Ashford Tunnels – A Retrospective"	Hosted by ICE at One Great George Street, Westminster, London SW1P 3AA	AECOM, Atkins, Arup and Mott MacDonald
20th March 2019	59th Rankine Lecture and Dinner at Imperial College Preceded by free half-day seminar at Imperial College	Dr George Gazetas of the National Technical University of Athens, Greece on "Benefits of Unconventional Seismic Foundation Design". Engineering Resilient Infrastructure	
20th March 2019	BGA ECG Post 59th Rankine Lecture Drinks at Imperial College h-bar		AECOM

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BGA 59th Rankine Lecture

on Wednesday 20th March 2019 at 5.30 pm
at
Imperial College, London

Dr George Gazetas

on

Benefits of Unconventional Seismic Foundation Design

ice

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Imperial College
London

Engineering Resilient Infrastructure

A free half day seminar at Imperial College London

1:00 – 4:30 pm on 20th March 2019,
followed by Rankine lecture at 5:30pm

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Post 59th Rankine Lecture Drinks

Please join the ECG at Imperial's h-bar for drinks

sponsored by AECOM

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Please join us now for drinks

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