The Institution of
StructuralEngineers

Worked examples: Initial Professional Development (IPD) final report form

In this document you will find three completed IPD final report forms: a poor example, an average example and a good example. Brief notes are given before each.

Poor example

In the example overleaf you will note that:

- There is not enough specific information in this report for us to assess how the candidate has met each core objective.
- It's not personal enough and makes no reference to projects the candidate has worked on.
- This lack of detail will make a professional review interview more difficult, as the interviewers will have to ask more questions to get the relevant detail.
- This mentor's comment doesn't tell us much and won't benefit the candidate. We are looking for informative statements about the candidate's development.

The Institution of
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International HQ,
47-58 Bastwick Street,
London EC1V 3PS, UK

T +44 (0)20 7235 4535
E membership@istructe.org

www.istructe.org

Initial Professional Development (IPD)

Final report form

Candidate details			
Full name:	M S Engineer	Date:	
Membership number:			

Standard achieved							
Core objective:	2.1 - Conceptual Design						
Standard achieved (please tick)	A ☐	K ☐	E ☐	B ☑			

Report

Please tell us below how you have achieved the minimum standard, citing specific examples from projects you have worked on.

I have gained the ability through experience of conceptual design on various projects, not only to appraise the best solution in terms of structure but to work with the design team to find the best integrated solution to meet the needs of the particular project.

This has been done through conceptual design discussions with the design team on subjects such as visual appearance, thermal mass, acoustics, buildability, air tightness, cost and the possibilities of integration of structure and service schemes to provide both energy and/or cost savings.

The conceptual design is a key element of every tender when the best value for the project is sought from designers and contractors. An inappropriate design may lead to concerns regarding its viability as a structure or other health and safety issues.

Any design should respond to the client's requirements in terms of cost, aesthetics and use.

IPD
Final report

Report (cont.)

Please continue on a separate sheet if necessary.

Mentor's comments:

(You are only required to include a mentor comment if following the individually managed route - but we still welcome comments if you're following another route.)

Agreed.

Please continue on a separate sheet if necessary.

Signatures

Candidate's signature:	
Mentor's signature:	Mentor's name (please print): M Entor

Average example

In the example overleaf you will note that:

- There is some information about the candidate's activities, but there still isn't enough detail.
- You should provide specific information about the projects you mention and reference further information in your supporting documentation.
- The mentor comments confirm their belief the candidate meets the minimum standard, but we would like to see more about the candidate's development.

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Membership number:			

Standard achieved							
Core objective:	2.1 - Conceptual Design						
Standard achieved (please tick)	A	☐	K	☐	E	☐	B	☑

Report

Please tell us below how you have achieved the minimum standard, citing specific examples from projects you have worked on.

I have been responsible for the production of conceptual schemes for numerous projects – new builds as well as refurbishments/extensions – in particular structural steel against reinforced concrete and masonry against timber framed structures.

I have also prepared options for safely constructing retaining walls by either a bored piled retaining wall or a sequenced traditional reinforced concrete retaining wall. These projects involved both the superstructure and foundation options for tenders/contractor pricing.

Refer to the following within my portfolio of work:

- Hancock Bridge strengthening
- Burj Al Qatan
- Cable-stayed bridge over Dnepr river
- Arch dam

IPD
Final report

Report (cont.)

Please continue on a separate sheet if necessary.

Mentor's comments:

(You are only required to include a mentor comment if following the individually managed route - but we still welcome comments if you're following another route.)

I confirm that M S Engineer has undertaken the tasks detailed above to a standard of Ability. This can be confirmed within the portfolio of work.

Please continue on a separate sheet if necessary.

Signatures

Candidate's signature:

Mentor's signature: Mentor's name (please print): M Entor

Good example

In the example overleaf you will note that:

This is a strong IPD report form. It provides:

- A brief paragraph setting out the candidate's approach to the objective.
- Details of specific projects that are relevant to the core objective and demonstrate the required standard.
- References to supporting portfolio of evidence.
- Specific and positive comments from a mentor that expresses confidence in the candidate and describes their progression in the relevant area.

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Final report form

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Full name:	M S Engineer	Date:	
Membership number:			

Standard achieved							
Core objective:	2.1 - Conceptual Design						
Standard achieved (please tick)	A ☐	K ☐	E ☐	B ☑			

Report

Please tell us below how you have achieved the minimum standard, citing specific examples from projects you have worked on.

During my career I have displayed a strong ability to conceive viable alternate structures as per the client's brief. In so doing I take into account the costs, aesthetics, materials, durability and construction methods of the project. An ability in conceptual design has been demonstrated in the following projects. (References refer to the portfolio of work where more detailed information can be found including comparisons of different materials, designs etc.)

Ultrasonicated honey processing plant, Devon

Ref: Section 2.1.1
£2.2 m, two storey, masonry/fabricated steel structure
Complications included:

- The site being on a significant gradient
- Close proximity of river – required construction of retaining walls
- Ground investigation showed that ground bearing pressure was not sufficient to use traditional foundations
- Ground improvement required through use of piled foundations
- Close proximity of major road – required construction of retaining walls and removal of existing derby retaining wall as client wished the plant to be built 2 m below the road level. Options for removing derby wall were presented to the client and a contiguous retaining wall constructed to support both

(Replacement) Arch Bridge, River Isar, Munich

Ref: Section 2.1.2
£1.5m, two storey (railway and two-lane roadway), steel bridge, three arch 250m span
Replacing a historic bridge which had been rendered unsafe due to an impact by a ferry

IPD
Final report

Report (cont.)

Improvements to the original design were possible:

- Steel replaced concrete due to quicker construction and lower weight demands
- Structural system improved by making all arches externally statically determent. This was achieved by tying the arches throughout the bridge deck

Exhibition centre, Liverpool

Ref: Section 2.1.3

£125 m, 4 storey (with mezzanine), precast concrete/fabricated steel structure

Complications included:

- Client requested no columns within the main 36m2 exhibition hall
- Structural steel truss used as economically viable and met the height requirements
- Numerous staircases and ramps, which were all treated as individual structures within the overall design
- A combination of support systems (bearing walls, beams, hanging walls, etc) were used
- Flexibility of ground floor (main) exhibition hall – utilised a braced steel transfer frame with the floor beams using UC sections; beam deflection analysis was essential to assess the deflection from the dead load of the precast structure of the floors above

Please continue on a separate sheet if necessary.

Mentor's comments:

(You are only required to include a mentor comment if following the individually managed route - but we still welcome comments if you're following another route.)

Whilst acting as M S Engineer's mentor for the last four years, a significant improvement in conceptual design ability has been apparent. Initially M S Engineer gained significant ability in designing 'traditional' structures but after only a short period of time was encouraged to undertake the design of more complex and challenging structures. M S Engineer clearly relishes the challenges posed in designing more complicated structures or where there are underlying problems which must be surmounted for the project to succeed. An innovative approach can be seen in the foundation design (in which they have become something of an office expert) for the honey processing plant and the flexible use ground floor of the exhibition centre.

I would not hesitate to assign major and challenging projects to M S Engineer as I have every confidence that sufficient ability in conceptual design will be demonstrated to ensure that the project is a success.

Please continue on a separate sheet if necessary.

Signatures

Candidate's signature:

Mentor's signature: Mentor's name (please print): M Entor