

Welcome

**Week 2 – Introduction to conceptual design
for structural engineers**

11:30am – 1:30pm London time

think up

Your host

**Oliver
Broadbent**



Contents

1. Orientation and contracting
2. Review of last week
3. Where do ideas come from
4. Information
5. Mixing
6. Workwork

1

Contracting

Orientation

- 'Raise your hand', 'Agree/Disagree' and 'Laugh' using 'set status'

Orientation

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- Ask questions in 'Chat'

Orientation

- 'Raise your hand', 'Agree/Disagree' and 'Laugh' using 'set status'
- Ask questions in 'Chat'
- See who is talking in 'Attendees'

Orientation

- 'Raise your hand', 'Agree/Disagree' and 'Laugh' using 'set status'
- Ask questions in 'Chat'
- See who is talking in 'Attendees'
- 'Mute your mic' when you are not talking

Contracting:

Q1

What do you want out of this training?

- **Gain a better understanding of what conceptual design actually mean**
- **Be better prepared for the IStructE exam**
- **Gain some useful Conceptual Design tools and techniques**
- **Gain efficiencies, better process**
- **Increase your scope to influence conceptual design on projects**

Contracting:

Q2

What can you offer other people?

- **What can you offer? Sharing experiences with others including experience of having sat the IStructE exam**
- **Sharing tools and techniques you already use...**
- **Knowledge and experience of design and delivery workflow**
- **Project-specific experience**

Contracting:

Q3

How might you sabotage it?

- **It's late!**
- **Feeling ungenerous, unwilling to share ideas etc.**

That's our contract to each other

- **Our terms of engagement**
- **We will review these every session**

2

Review of last week

Review of last week

- **Use a design brief to review last week's work**
- **Do this review in breakout rooms**
- **This is a brief that you are going to be working with today**

Breakout instructions

- **Download the PDF file in the 'Design Brief' box in your breakout area**
- **Discuss the brief for the Hazel Hill Wood hideaway**
- **On the white board, write down key learning outcomes from last week**
- **Give examples using this brief**

Review of last week

Switch to breakouts



Breakout instructions

- **Download the PDF file in the 'Design Brief' box in your breakout area**
- **Discuss the brief for the Hazel Hill Wood hideaway**
- **On the white board, write down key learning outcomes from last week**
- **Give examples using this brief**

Review of last week
Switch to main layout



**What did we learn
about the briefing
phase in the design
process?**

The brief:

4 elements of a brief

- **The explicit – what they do say.**
- **The implicit – what they mean by what they say.**
- **The assumed – what they don't think they need to say.**
- **The unknown – what they don't say because they haven't yet realised they want it.**

The brief: The designer's paradox

The client doesn't know what they want until they know what they can have. You don't know what the answer will necessarily look like until you have started designing.



Workwork

What did you learn from your Workwork?

3

Where do ideas come from?

**Where do ideas come
from?**

**An idea is a new
connection between
existing elements in the
mind**

Control two things:

Control two things:
**1. The information in
the mind**

Control two things:

**1. The information in
the mind**

**2. How we form new
connections**

4

Information

Three sources of information

Three sources of information

1. The brief

Three sources of information

1. The brief

2. Professional knowledge

Three sources of information

1. The brief

2. Professional knowledge

3. Outside interests

Three sources of information

1. The brief

2. Professional knowledge

3. Outside interests

**What information does
the brief provide?**

What information does the brief provide

1. Background/context

2. Geometry

3. Relationships

4. Use cases

Breakout instructions

- **Sketch the site**
- **What key information does the brief provide you with?**
- **What questions do you have which may lead to more more information?**
- **Annotate your sketch with useful information you have found and questions that arise**

What information does the brief provide?
Switch to breakout review



Breakout instructions

- **Sketch the site**
- **What key information does the brief provide you with?**
- **What questions do you have which may lead to more more information?**
- **Annotate your sketch with useful information you have found and questions that arise**

What information does the brief provide?
Switch to main layout



What information does the brief provide?

1. Background/context

2. Geometry

3. Relationships

4. Use cases

Write down in your hand-outs

- 1. How you can use this technique in your work to prepare for the exam**
- 2. How you can use the technique in the exam**

Three sources of information

1. The brief

2. Professional knowledge

3. Outside interests

**What do you already
know about that you
can draw upon?**

What do you already know about that you can draw upon?

- 1. Structural typologies**
- 2. Material properties**
- 3. Construction techniques**
- 4. Reference projects**

Breakout instructions

Brainstorm examples of each of the following that it would be useful for you to know about to help you generate ideas in response to this brief

- 1. Structural typologies**
- 2. Material properties**
- 3. Construction techniques**
- 4. Reference projects**

What professional knowledge?

Switch to breakout review



Breakout instructions

Brainstorm examples of each of the following that it would be useful for you to know about to help you generate ideas in response to this brief

- 1. Structural typologies**
- 2. Material properties**
- 3. Construction techniques**
- 4. Reference projects**

What professional knowledge?
Switch to main layout



What do you already know about that you can draw upon?

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- 2. Material properties**
- 3. Construction techniques**
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Write down in your hand-outs

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- 2. How you can use the technique in the exam**

Three sources of information

1. The brief

2. Professional knowledge

3. Outside interests

**How can outside
interests provide
information?**

How can outside interests provide information?

- 1. Personal interests**
- 2. Experiences**
- 3. Things you have seen**

Breakout instructions

- **Everyone choose one of their outside interests**
- **Take turns to say how an aspect of your outside interest could inspire a new idea**
- **Don't worry – at this stage no suggestion is a bad suggestion.**
- **Capture suggestions on the white board**

What outside interests?
Switch to breakout review



Breakout instructions

- **Everyone choose one of their outside interests**
- **Take turns to say how an aspect of your outside interest could inspire a new idea**
- **Don't worry – at this stage no suggestion is a bad suggestion.**
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What outside interests?
Switch to main layout



How can outside interests provide information?

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- 2. Experiences**
- 3. Things you have seen**

Write down in your hand-outs

- 1. How you can use this technique in your work to prepare for the exam**
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Three sources of information

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2. Professional knowledge

3. Outside interests

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Mixing

**How can we mix the
information in our
minds to create new
connections?**

How can we mix the information in our minds to create new connections?

1. Ask 'what if?'

How can we mix the information in our minds to create new connections?

1. Ask 'what if?'

2. Change the key system

How can we mix the information in our minds to create new connections?

- 1. Ask 'what if?'**
- 2. Change the key system**
- 3. Draw from a different perspective**

How can we mix the information in our minds to create new connections?

1. Ask 'what if?'

2. Change the key system

3. Draw from a different perspective

Asking 'what if?'

Asking 'what if?'...

- 1. Money was no object?**
- 2. We had to build the structure next week?**
- 3. All materials had to come from the site?**

Breakout instructions

- **Each person takes it in turn to ask 'what if...?', completing the sentence however they like**
- **The others write down or sketch the ideas that come to mind when the question is asked**

Ask 'what if?'

Switch to breakout review



Breakout instructions

- **Each person takes it in turn to ask 'what if...?', completing the sentence however they like**
- **The others write down or sketch the ideas that come to mind when the question is asked**

Ask 'what if?'
Switch to main layout



**What happened when
you asked 'what if?'**

Write down in your hand-outs

- 1. How you can use this technique in your work to prepare for the exam**
- 2. How you can use the technique in the exam**

How can we mix the information in our minds to create new connections?

1. Ask 'what if?'

2. Change the key system

3. Draw from a different perspective

**What is the key
system?**

What is the key system?

The key system is the system in the solution which dominates the solution space.

Once that system has been determined, it sets the main parameters for the design

Breakout instructions

- **Discuss what the 'key system' is likely to be in the solution space**
- **Suggest different design solutions for that key system.**
- **What is the impact of changing the key system on the design?**

Changing the key system

Switch to breakout review



Breakout instructions

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- **Suggest different design solutions for that key system.**
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Changing the key system

Switch to main layout



**What happened when
you changed the key
system?**

Write down in your hand-outs

- 1. How you can use this technique in your work to prepare for the exam**
- 2. How you can use the technique in the exam**

How can we mix the information in our minds to create new connections?

1. Ask 'what if?'

2. Change the key system

3. Draw from a different perspective

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Workwork

Workwork

Develop an idea for the hideaway

- It doesn't matter how unusual it is or how feasible it is.
- 4 volunteers to submit an idea that we can use in the 3rd workshop

Keep a daily briefing diary

- For the design task you are working on that day
- How are you gathering information and how are you mixing it?
- See the example on the next slide
- Send a scan of your daily briefing diary if you want us to comment on it to: info@thinkup.org
- Send scans by Monday 30th April at 5pm London time

Workwork

Day	Task	Information gathering	Mixing
Tuesday			
Wednesday			
Thursday			
Friday			
Monday			

**Details of
the next session...**

Next session

- **11:30am – 1:30pm London time**
- **Please log on half an hour earlier to make sure your audio is working correctly.**

Thank you!

think up