

**EMBEDDING SUSTAINABILITY  
IN UNDERGRADUATE CIVIL  
ENGINEERING COURSES**

**A PRACTICAL GUIDE**

**think up**

RECYCLING 1 TONNE OF STEEL:  
- SAVES 1.5 TONNES OF IRON ORE  
- SAVES 0.5 TONNES OF COKE  
- SAVES 1.28 TONNES OF SOLID WASTE  
- REDUCES AIR POLLUTION BY 86%  
- REDUCES WATER POLLUTION BY 76%  
- REDUCES THE ENERGY NEED BY 74%

1.987 tonnes CO<sub>2</sub> per tonne

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## think up



**What makes the sustainability  
different?**

**CHALLENGE ONE:**

Complexity

**CHALLENGE TWO:**

VALUES-BASED

DECISION

MAKING

**CHALLENGE THREE:**

INTER-  
DISCIPLINARY  
WORKING



# **NINE PRINCIPLES FOR ENHANCING SUSTAINABILITY TEACHING**



# PRINCIPLE ONE

Sustainability  
is mindset,  
not a subject

# PRINCIPLE TWO

Establish the  
basic building  
blocks

# PRINCIPLE THREE

See the whole

picture

(systems thinkings)

# PRINCIPLE FOUR

Develop critical  
thinking to help  
understand different  
perspectives

# PRINCIPLE FIVE

Learn from  
other stakeholders

# PRINCIPLE SIX

Learn from  
other disciplines

# PRINCIPLE SEVEN

Apply judgement  
to real problems

# PRINCIPLE EIGHT

Emphasise a  
commitment to  
professional values



# PRINCIPLE NINE

Take learners  
outside their  
comfort zones



# REPORT AVAILABLE TO DOWNLOAD FROM:

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Oliver Broadbent  
Director, Think Up

[oliver.b@thinkup.org](mailto:oliver.b@thinkup.org)

THINK UP  
FIRST FLOOR  
MORLEY HOUSE  
320 REGENT STREET  
LONDON W1B 3BB

+44 20 7307 6520  
[INFO@THINKUP.ORG](mailto:INFO@THINKUP.ORG)

[WWW.THINKUP.ORG](http://WWW.THINKUP.ORG)