

# Embedding Sustainability in Higher Education Course Content: The Industry Perspective

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Innovation and Integration:

Putting Ideas into Action  
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# Introduction

- Context
- Background to research
- Research approach
- Research Findings
- Analysis
- Recommendations
- Future work

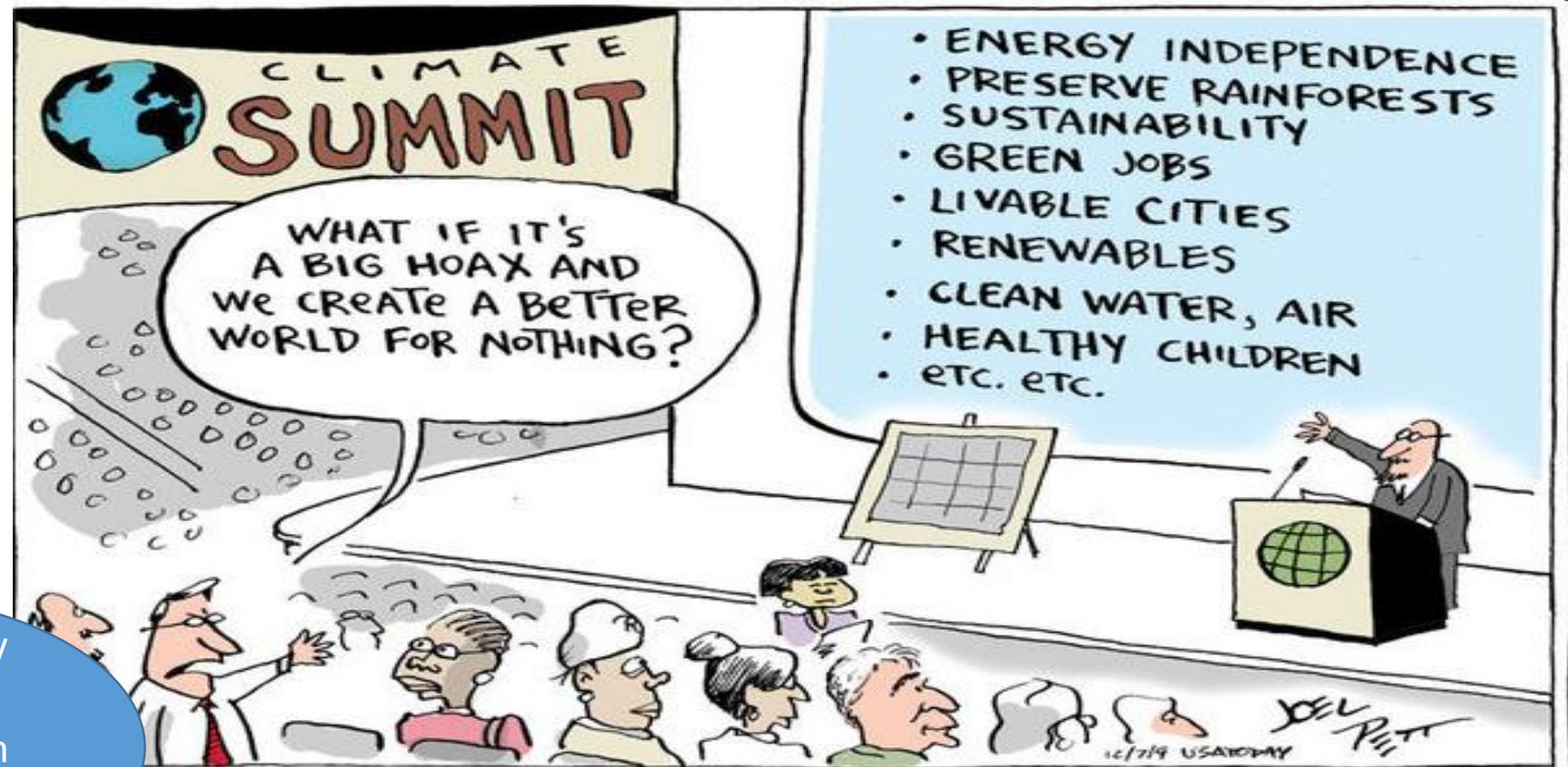






# The Making of the Wrong Decision is Very Powerful

“Education is an important Element in addressing sustainable development”



In light of the very recent announcement on Paris Agreement by the US President

# Common Reasons for Inaction identified

- A view that... Climate change is not happening
- It is, but it is overstated
- We (what ever country) are only a tiny part of the problem
- It is important, and something should be done but...
  - The government should fix it
  - Technology will save us
  - The market will rectify the problem
  - Other polluters (China, US etc.) go first
  - Why should I do something if others don't
  - The problem is too big for me to influence
  - I would act, but don't like any of the low carbon choices

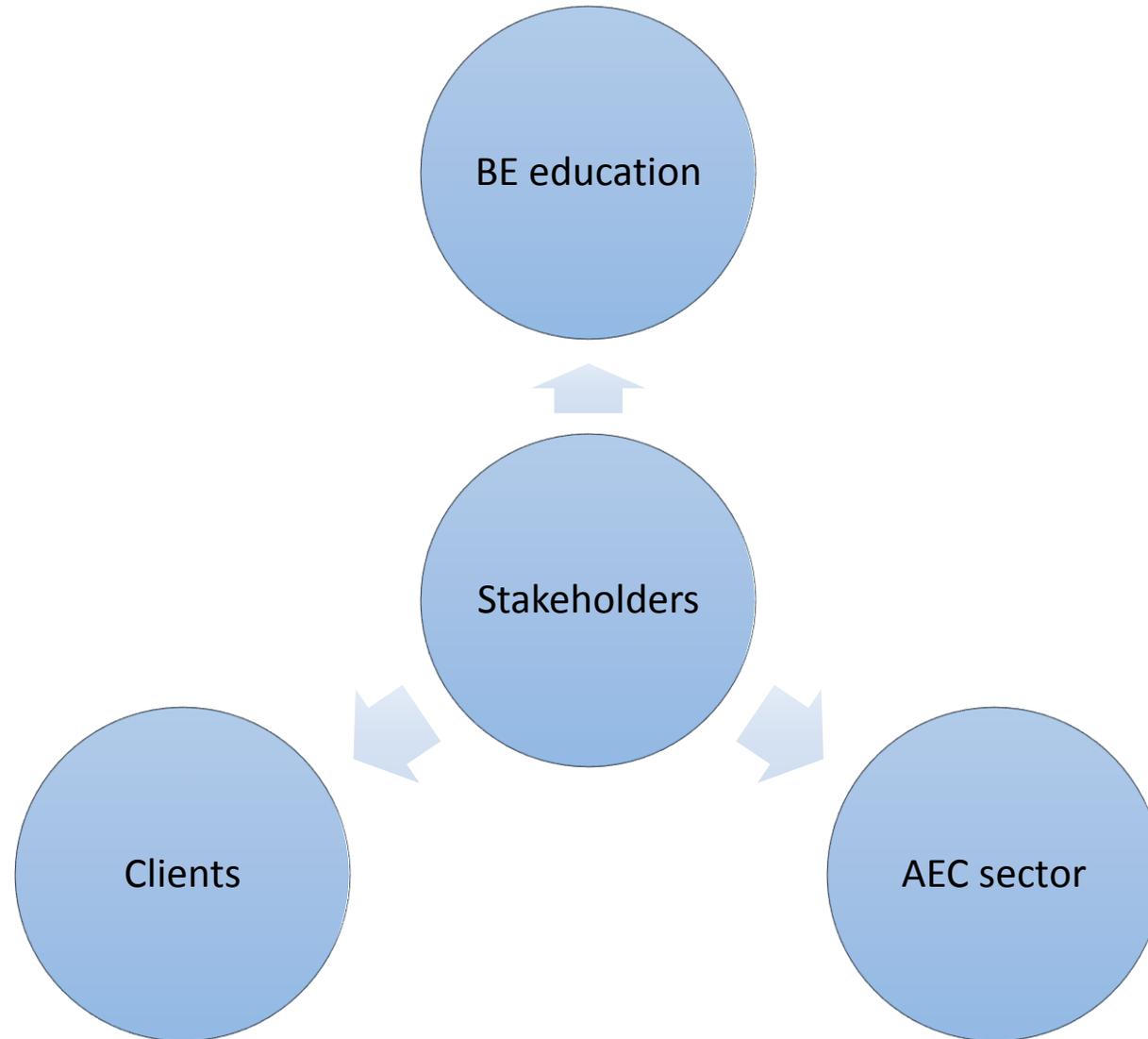
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**Just could not be bothered!!!**



# Context – is very important



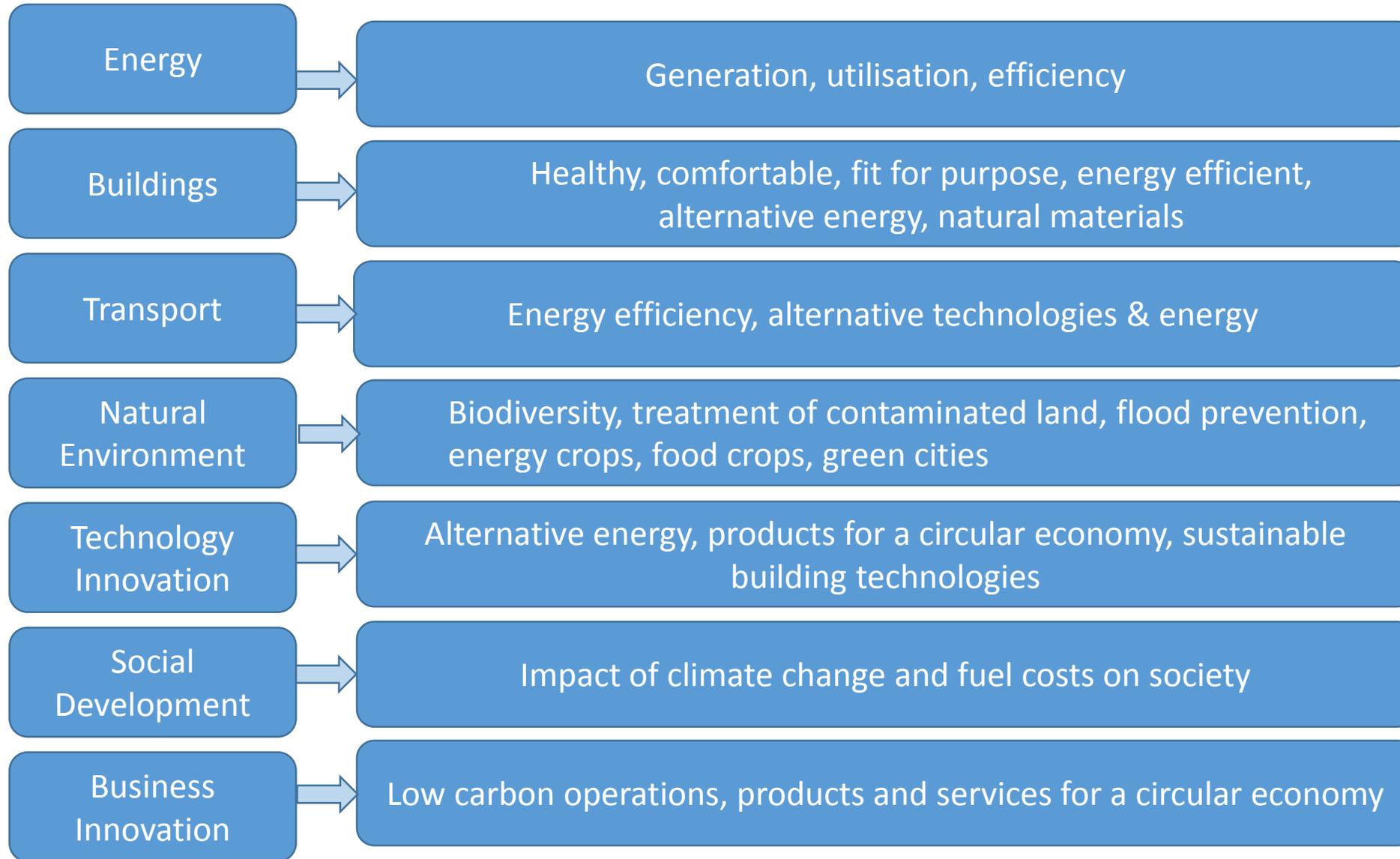
# The context - continued



My Top Ten posts in 2014... on Sustainability in HE & ESD

- Higher Education
- University approaches
- Approach to program development
  - Embedded across program(s)
  - Stand alone
- Professional status of programs
- Accreditation

# Embedding Sustainability into BE Curricula: Sample themes



# The context - continued

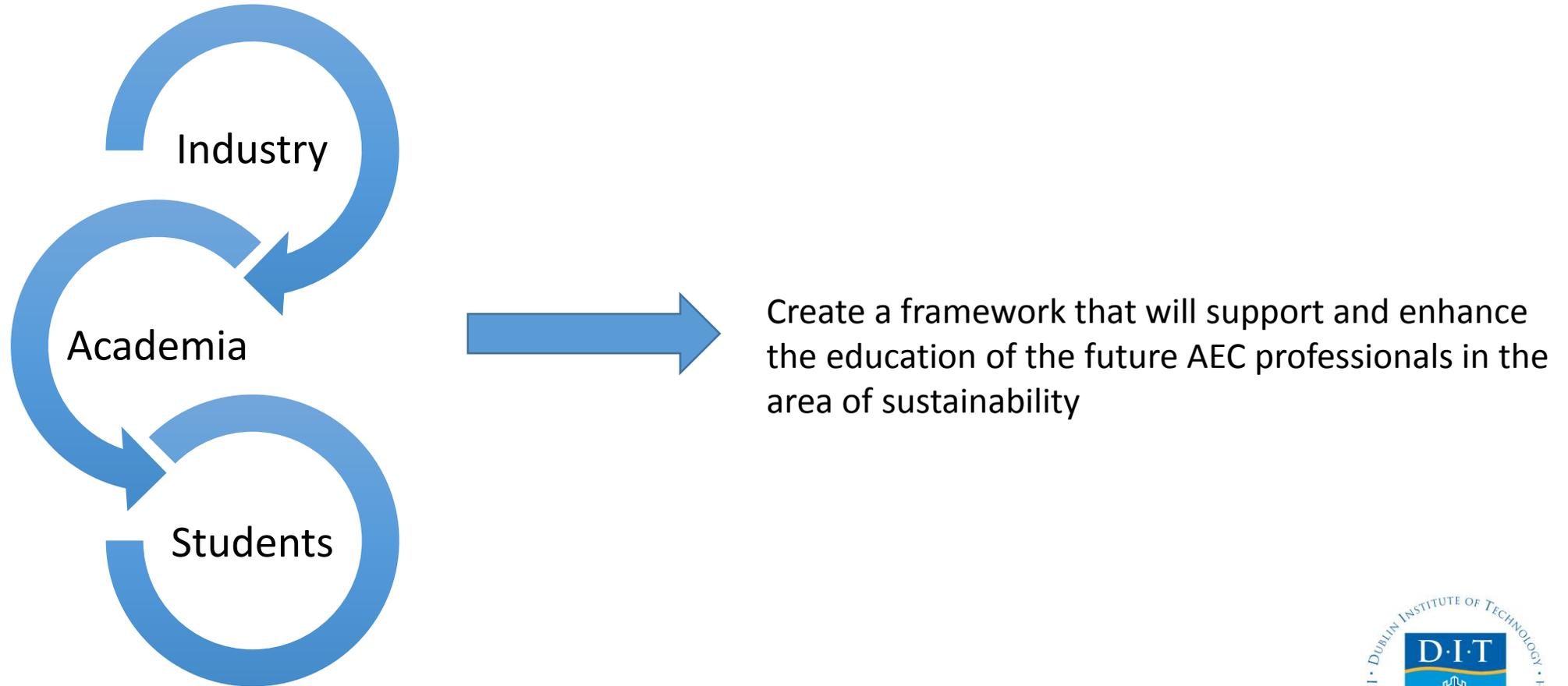
- AEC sector
- What the sector expects from graduates
  - Industry ready (complete)
  - Soft skills
  - Adaptability
  - Cutting edge knowledge/ practices



# The research questions

- So what is the issue
  - AEC sector makes the point that graduates:
  - “do not have the required skill, knowledge and competence when it comes to sustainability”
- Aims of research
  - There is a need to investigate what the AEC sector considers as an appropriate level of knowledge, skill and competence wrt to sustainability
  - What is it that BE higher education is doing to prepare graduates to have the required level of K, S and C around sustainability.

# Scope of research – ongoing research project



# Research method

- Mainly quantitative survey instrument used with a series of closed questions
  - One open question –
    - what they believed was omitted in BE undergraduate programs
  - Respondents asked to indicate if they would be willing to take part in a follow interview/ focus group
- Some 312 responses representing design and construction professionals across 15 countries.
  - 97% of data was deemed reliable
  - Data was acceptable for analysis
- Ethical approval was sought and approved

# Comparison between industry and educators

Essential Sustainability Knowledge	Industry Expectations	Actual Inclusion in Education	Diff. in Ranks
	Rank	Rank	
Biomimicry	1	9	8
Green building construction means and methods	2	4	1
Climate change	3	8	5
Green buildings products and materials	4	3	1
Life cycle cost analysis of green buildings	5	5	0
Principles of green building construction	6	1	5
Green building rating systems	7	2	5
Building codes related to green technology	8	7	1
Green building design process	9	6	3

# Comparison on feedback on Rating systems used

Rating Systems	Industry Feedback		Actual Implementation in Education		Diff. in Ranks
	Freq.	Rank	Freq.	Rank	
LEED	70%	1	88%	1	0
BREEAM	31%	2	30%	3	1
Green Globes	2%	3	13%	4	1
Living Building Challenge	2%	3	10%	5	2
Energy Star	<1%	4	33%	2	2
NAHB Green Rating System	<1%	4	10%	5	1
CASBEE	<1%	4	2.5%	6	2

# Some feedback from AEC sector

- “I would like to see some **team building approaches** include in programmes where students get to apply sustainability principles where they would apply themselves to solve a project that included sustainable solutions”
- “Allow them to come up with **sustainable solutions through real projects** and/or simulations”
- “Graduates should have the necessary **skills** to implement sustainable practices”
- “We rely on graduates to address **the knowledge gaps that we have**”
- “There should be some incentive to employing graduates **where they can learn the cutting edge applications of new practices**”

# Conclusion

- Outcomes from research
- Continues to be a gap between industry and education expectation
  - It is a general issue that requires a local response (context)
- Need for greater effort to be made to embed sustainability in BE HE education
- Similar problems across the regions
- Future research
- Qualitative R work with industry stakeholders
- Report on the outcomes from what research from students indicates – both pre and post course and post course
- Compare across the groups

# Conclusion

- Outcomes from research
- Continues to be a gap between industry and education expectation
- Need for greater to be embed sustainability in BE HE education
- Future research
- Qualitative work with industry stakeholders
- Report on the outcomes from what research from students

**Lots done ! More to do!**



# Thank you for listening

“To reverse the effects of civilization would destroy the dreams of a lot of people. There's no way around it. We can talk all we want about sustainability, but there's a sense in which it doesn't matter that these people's dreams are based on, embedded in, intertwined with, and formed by an inherently destructive economic and social system. Their dreams are still their dreams. What right do I -- or does anyone else -- have to destroy them.

At the same time, what right do they have to destroy the world?”

— [Derrick Jensen, Endgame, Vol. 1: The Problem of Civilization](#)



