

# Helping organisations to address sustainability in practice

## Leeds Sustainability Institute

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# Anthropogenic Impact

- CO<sub>2</sub> and climate change
- Biodiversity reduction
- Misuse of Nitrogen
- Land use and misuse
- Fresh water supplies
- Toxic and chemical pollution
- Aerosol particles
- Ocean acidification
- Damage to the Ozone layer

# Definition of pH

$$\text{pH} = \log_{10} \frac{1}{[\text{H}^+]}$$

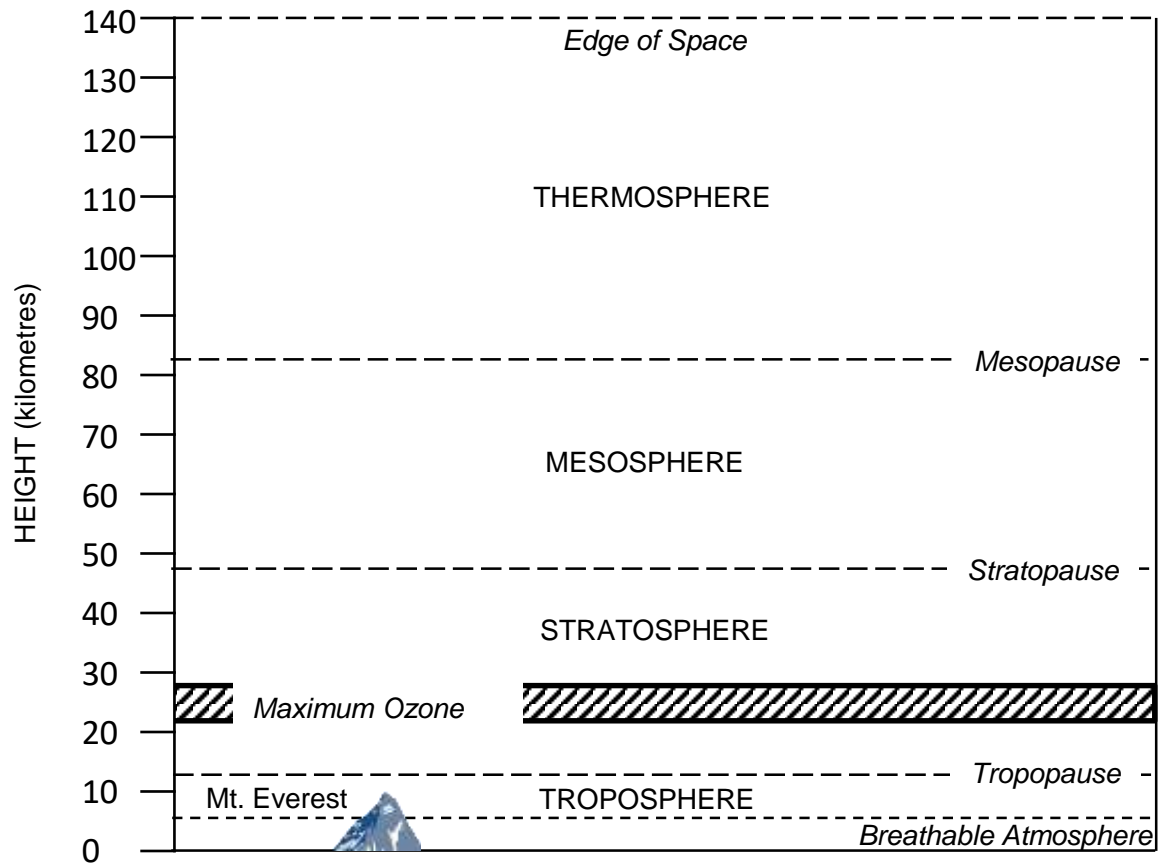
Where  $[\text{H}^+]$  is hydrogen ion concentration

# Total volume of water and atmosphere

[www.carbonvisuals.com](http://www.carbonvisuals.com)



Adam Nieman, Science Photo Library



# Leeds Sustainability Institute

Our areas of research  
expertise:





## Developing countries:

- Transport (access road flooding)
- Health (drinking water quality and pump maintenance)



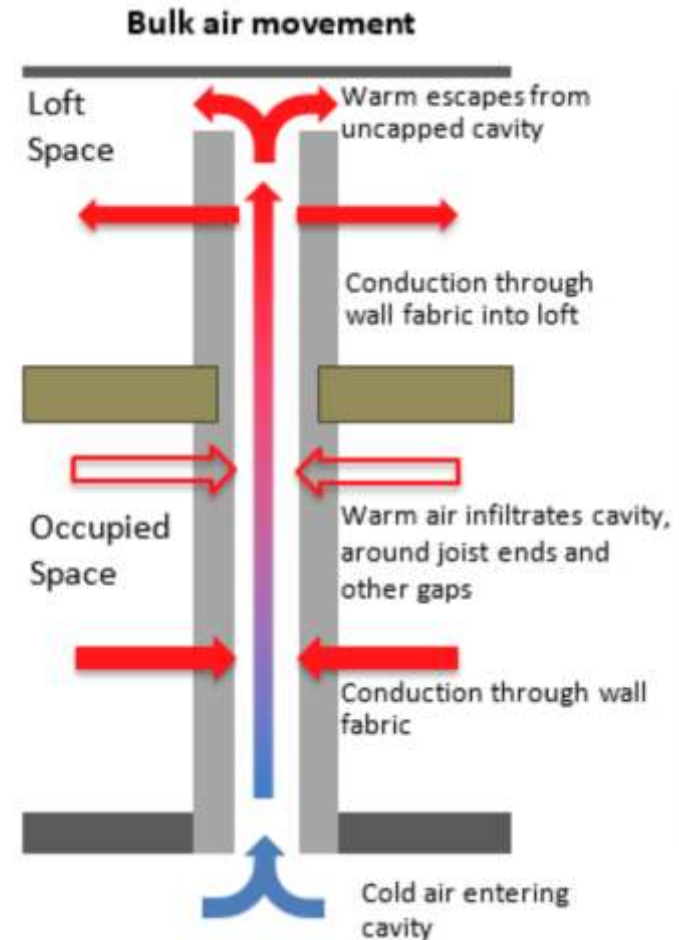
## UK: Sustainability concerns for housing associations, councils and government

- Fuel poverty
- Energy use
- Health (cold homes, over heating, mould)
- Maintenance costs (damp)
- Behaviour change (nudge)
- New technologies
- Retrofit decisions





## LSI breakthroughs: Co heating test methods and the party wall bypass



## Party walls: building regulations and retrofit policy



| Energy Efficiency Rating                    |          | Current                 | Potential |
|---|----------|-------------------------|-----------|
| Very energy efficient - lower running costs |          |                         |           |
| (92 to 100)                                 | <b>A</b> |                         |           |
| (81 to 91)                                  | <b>B</b> |                         |           |
| (69 to 80)                                  | <b>C</b> | 69                      | 71        |
| (55 to 68)                                  | <b>D</b> |                         |           |
| (39 to 54)                                  | <b>E</b> |                         |           |
| (21 to 38)                                  | <b>F</b> |                         |           |
| (1 to 20)                                   | <b>G</b> |                         |           |
| Not energy efficient - higher running costs |          |                         |           |
| England & Wales                             |          | EU Directive 2002/91/EC |           |

