ADVANCING EDUCATION AND ORAL HEALTH

ADEE ANNUAL MEETING
20•22 AUGUST 2025
DUBLIN IRELAND

50 ANNIVERSARY

Sustainability in Action

August | 2025

Objectives

By the end of the session, participants will be able to by following our journeys...

- The DDUH journey. How we created a sustainability strategy within a dental hospital setting (e.g., DDUH case study).
- Jonnies and Nina's journey: Recognise how sustainability learning outcomes can be integrated throughout a dental curriculum.
- All: Identify examples of undergraduate, postgraduate, and doctoral student involvement in sustainability projects.
- Lexys journey. Understand the role of Quality Improvement(QI) initiatives in advancing sustainability in dental practice.
- Reflect on their own teaching and institutional practices in relation to sustainability.
- Engage with peers to share challenges and co-develop solutions for advancing sustainability education.

So how did I get involved in sustainability?

The importance of mentors

ELSEVIER

Public Health

Volume 126, Issue 9, September 2012, Pages 770-777

Original Research

Taking a bite out of Scotland's dental carbon emissions in the transition to a low carbon future

B. Duane [a], J. Hyland [b], J.S. Rowan [c], B. Archibald [d]

Professor John Rowan

Director of UNESCO Centre for Water Law Policy and Science in Physical Geo

Energy Environment and Society, School of Humanities, Social Sciences and Law

The importance of mentors

nature > british dental journal > research > article

Research | Published: 27 October 2017

An estimated carbon footprint of NHS primary dental care within England. How can dentistry be more environmentally sustainable?

B. Duane, M. Berners Lee, S. White, R. Stancliffe & I. Steinbach

British Dental Journal **223**, 589–593 (2017) | Cite this article

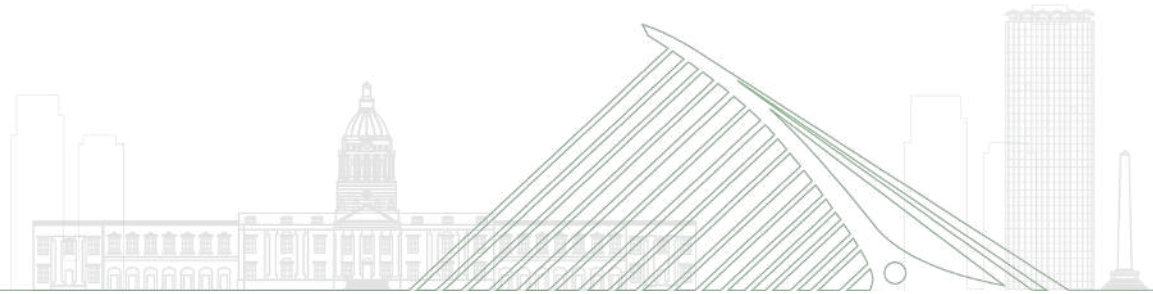
7768 Accesses | **88** Citations | **12** Altmetric | Metrics

Rachel Stancliffe · 1st
CEO at The Centre for Sustainable Healthcare

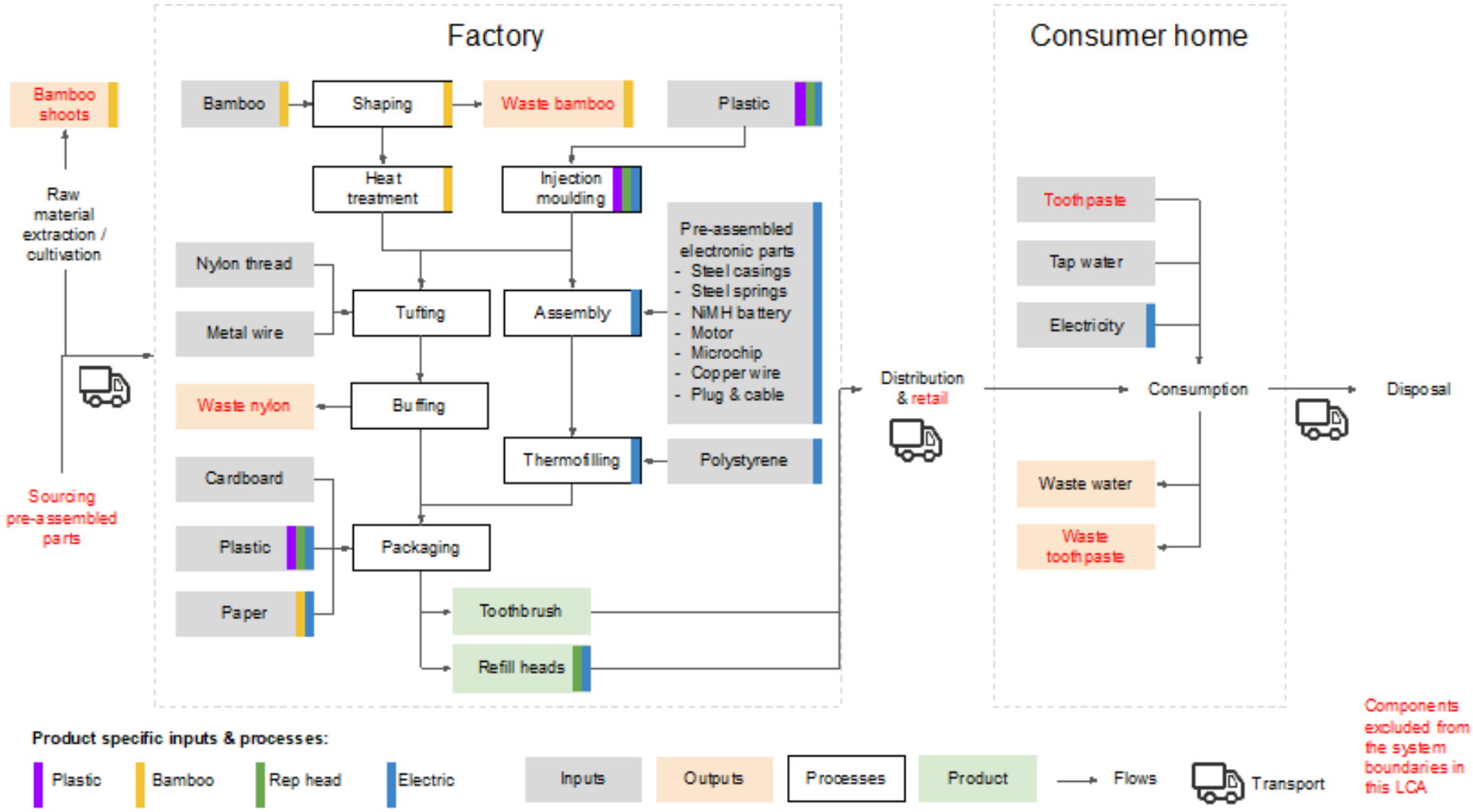
Do you have any questions for the sustainable analyst team? Please contact Ingeborg Steinbach, CSH's Lead Sustainability Analyst for more information.

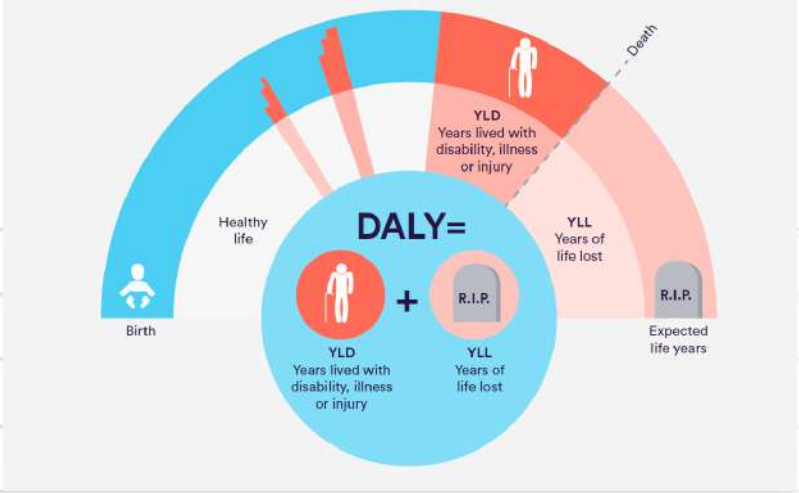
Sophie Saget
Postdoctoral Researcher - Environmental Sustainability of Food and Marine Bio-based Products and Processes

AARHUS UNIVERSITY | pure.au.dk



The importance of measuring




Death
YLD
Years lived with disability, illness or injury
Healthy life
DALY=
YLL
Years of life lost
R.I.P.
R.I.P.
Birth
Expected life years
YLD
Years lived with disability, illness or injury
YLL
Years of life lost

0.0008
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0
mineral/metal use
climate change
water use
freshwater eutrophication
respiratory inorganics effects
acidification
photochemical ozone creation
ozone layer depletion
terrestrial eutrophication
marine eutrophication
ionising radiation
land use
fossil use

General | Published: 12 January 2024

A carbon calculator: the development of a user-friendly greenhouse gas measuring tool for general dental practice (Part 2)

Brett Duane ✉, Ingeborg Steinbach & Louis Mackenzie

British Dental Journal **236**, 57–61 (2024) | Cite this article

	A	B	C	D	E
	Practice information	*Change the green cells*	*Conversion figures ignore these*		
	How many days is the practice open on an average year?	220.0			
	How many full time staff in the practice?	2.5			
	How many patients visits does the practice see every year?	2654.0			
	This week (make sure it's a normal week)				
	Staff travel (MILES)				
	How far do **all** staff travel return **to work** or **for work** by car.	587.5	0.5300	13701.6	**<-- Annualised Staff travel CFP**
0	**Patient travel (MILES)**				
1	*Do the simple patient survey for 30 patients (see notes) and total the distance of all patients travel by each method*				
2	Petrol/Diesel Car	174.3	0.5300	8174.6	
3	Electric Car	0.0	0.1830	0.0	
4	Bus	7.6	0.1500	101.3	
5	Train	37.2	0.1900	624.5	
6	Motorbike	10.0	0.1600	141.5	
7	Bike/Walk	6.0	0.0000	0.0	
8				9041.9	**<--Annualised patient travel CFP**
9	**Waste**				
0	*Total number of bags of*				
1	Plastic waste for recycling	0.5	0.0000	0.0	
2	Cardboard waste for recycling	0.4	0.0000	0.0	
3	Infectious waste for incineration	0.6	7.5869	4.3	
4	Domestic waste for disposal	0.9	1.1558	1.0	
5				232.2	**<--Annualised waste CFP**
6	**This year (make sure it's a normal year)**				
7	**Energy**				
8	*in KWh*				
9	Standard electricity	5387.0	0.2749	1480.7	
0	Green electricity	0.0	0.0110	0.0	
1	Solar power on your roof	0.0	0.0410	0.0	
2	Gas	11457.0	0.2100	2406.0	
3				3886.6	**<--Annualised energy CFP**
4	**Water**				
5	Water usage in Metres cubed	41.5	0.3378	14.0	**<--Annualised water CFP**
6					
7	Procurement: The things you buy: How much did you spend on other things, equipment, materials in pounds stirling £ (don't include rent, interest)	45454.8	0.1315	5975.8	**<--Annualised procurement CFP**
8					
9	**Your results for your practice**			**32852.2**	**Kg of carbon**
0	**The CFP of your average patient**			**12.4**	**Kg of carbon**
1					

The importance of a structure

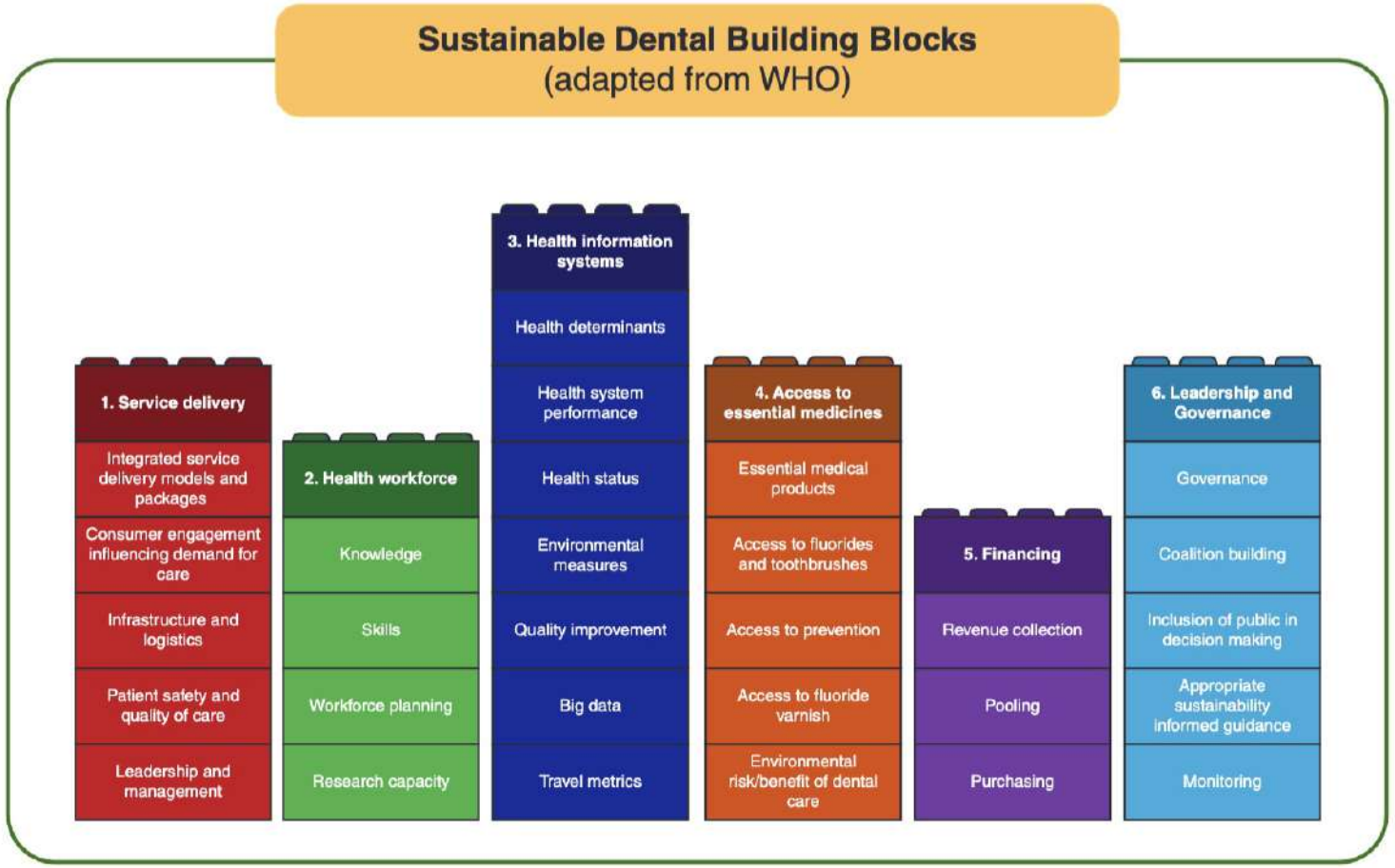
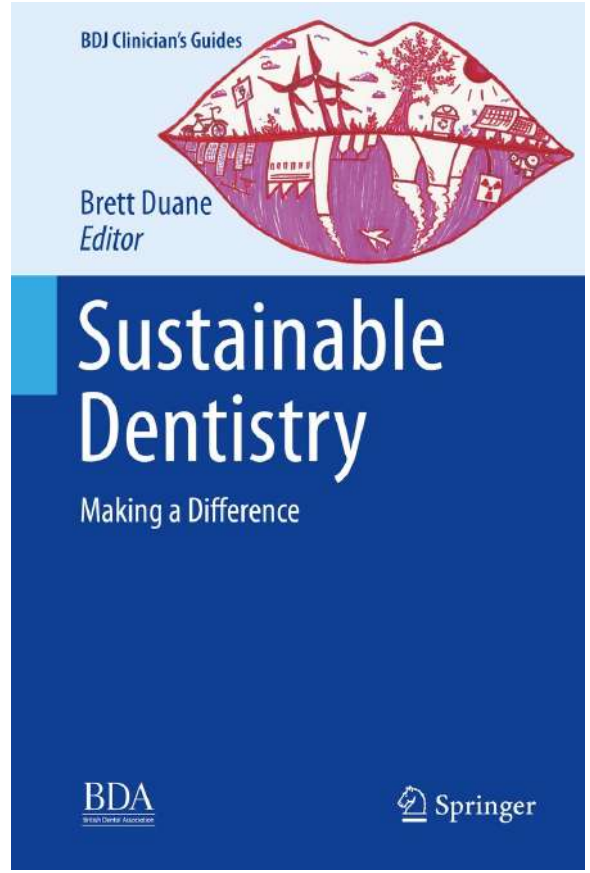


Fig. 12.1 Sustainable dental building blocks



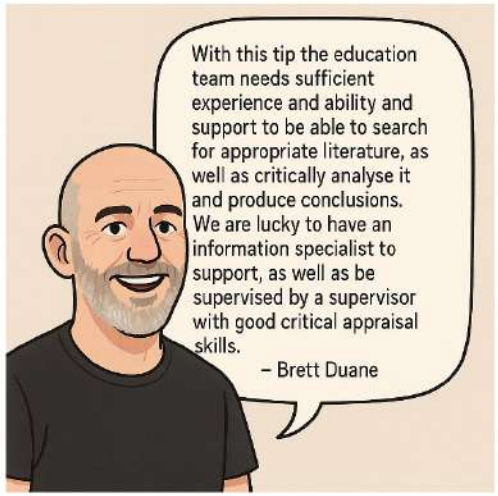
Twelve tips for teaching carbon footprinting to healthcare students using life cycle assessment

Common challenges include students' reluctance to question results for fear of being "wrong," and potential lack of access to benchmark specialised data. These can be mitigated by normalising the idea that variation and anomalies are learning opportunities, not failures.

Tip 4: Benchmark against healthcare literature and databases within healthcare

Benchmarking LCA outputs against peer-reviewed literature and reputable databases enables students to identify outliers, validate methodological choices, and understand the range of plausible results. This practice recognises Vygotsky's Zone of Proximal Development, where learners are unable to complete tasks unaided but with tailored guidance can be raised to the next level of understanding.[16,20] Benchmarking reinforces critical analysis skills and encourages methodological transparency by situating results within the broader body of evidence.

Our students compared their dialysis modality footprints to those in comparable studies.[21] Although not identical, the published ranges provided a valuable reference point to evaluate their work against.



Incorporating Measures of Sustainability Into Guideline Development

Paul Ashley [1], Alexandra Lyne [2], Bridget Johnston [3], Brett Duane [3]

Title

ECoHealth

EQUATOR Network Registration of ECoHealth Reporting Guideline under development can be accessed here https://www.equator-network.org/library/reporting-guidelines-under-development/reporting-guidelines-under-development-for-other-study-designs/#ECO

Description

Title: ECoHealth rep op

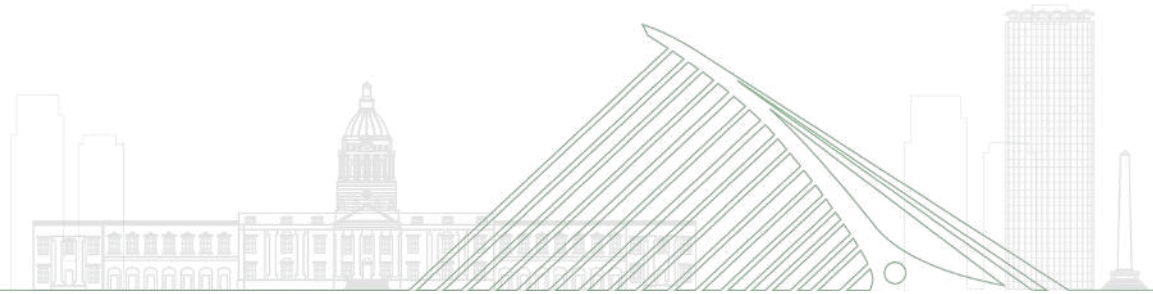
and disseminate a reporting guideline and checklist, ECoHealth, envisioned to be used by researchers, reviewers, and editors, for the purpose of improving the transparency and quality of publications of Life Cycle Assessment studies of the environmental consequences of healthcare products, services and systems. A protocol is provided, following guidance of the EQUATOR Network for the development of reporting guidelines.

Guidance for conducting environmental sustainability assessments of patient care pathways in healthcare

AstraZeneca

The importance of influencing

The importance of feedback



Student videos

Summary

Linnea

Conducted LCA of three dental procedures now more environmentally aware, advocating for sustainability education in dentistry.

Peter

Former head of procurement who discovered procurement's key role in embedding sustainability early in healthcare processes

Trinn

Orthodontics professor now incorporates sustainability alongside her teaching role.

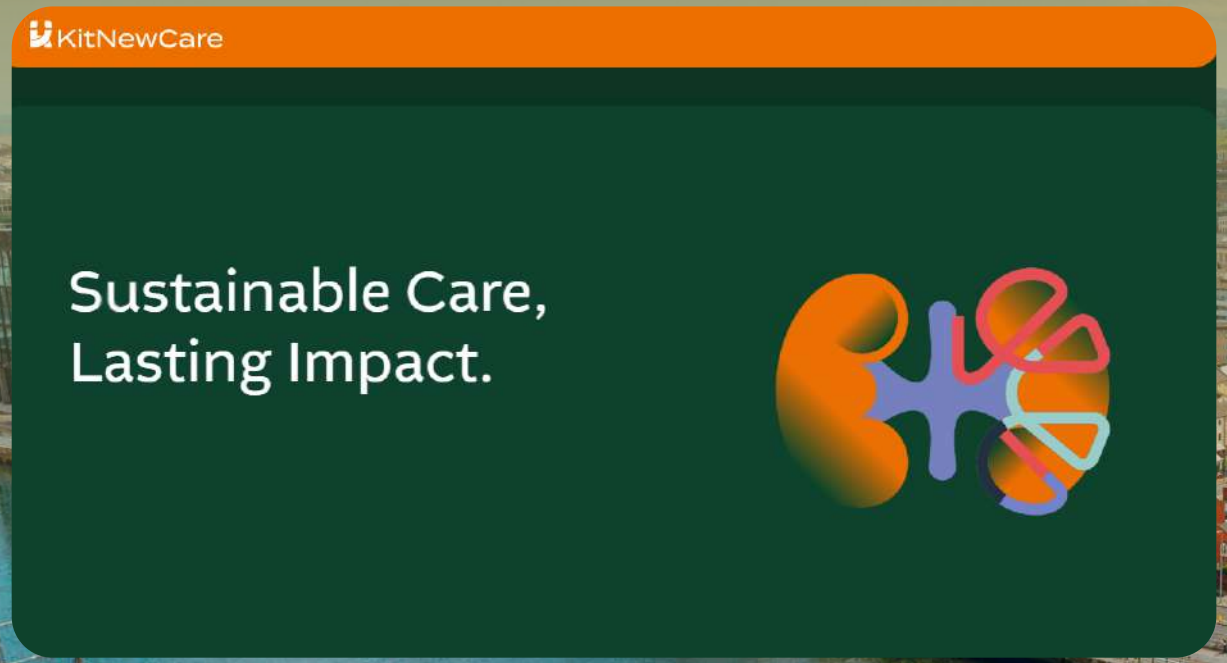
Sarah

Orthodontist believes sustainability should be embedded in training and clinical practice just like technical skills, to reduce waste and guide future generations.

Darshini

Dental public health postgraduate emphasises integrating sustainability from first-year training and educating both staff and students to drive innovation.

The importance of funding



Elements linked to KitNewCare's work packages (WPs) include Life Cycle Assessments (LCAs), benchmarking dashboards, sustainability training, pilot site evaluations, innovation matrices for technical solutions, policy briefs, and patient and public involvement (PPI) sessions.

KitNewCare is a **Horizon Europe** project (Grant Agreement ID 101137054) €6,000,000 2024-2027

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Lexy's journey

- Senior resident
- Twitter exchange
- LCA on toothbrushes
- Took us 1 year

RESEARCH

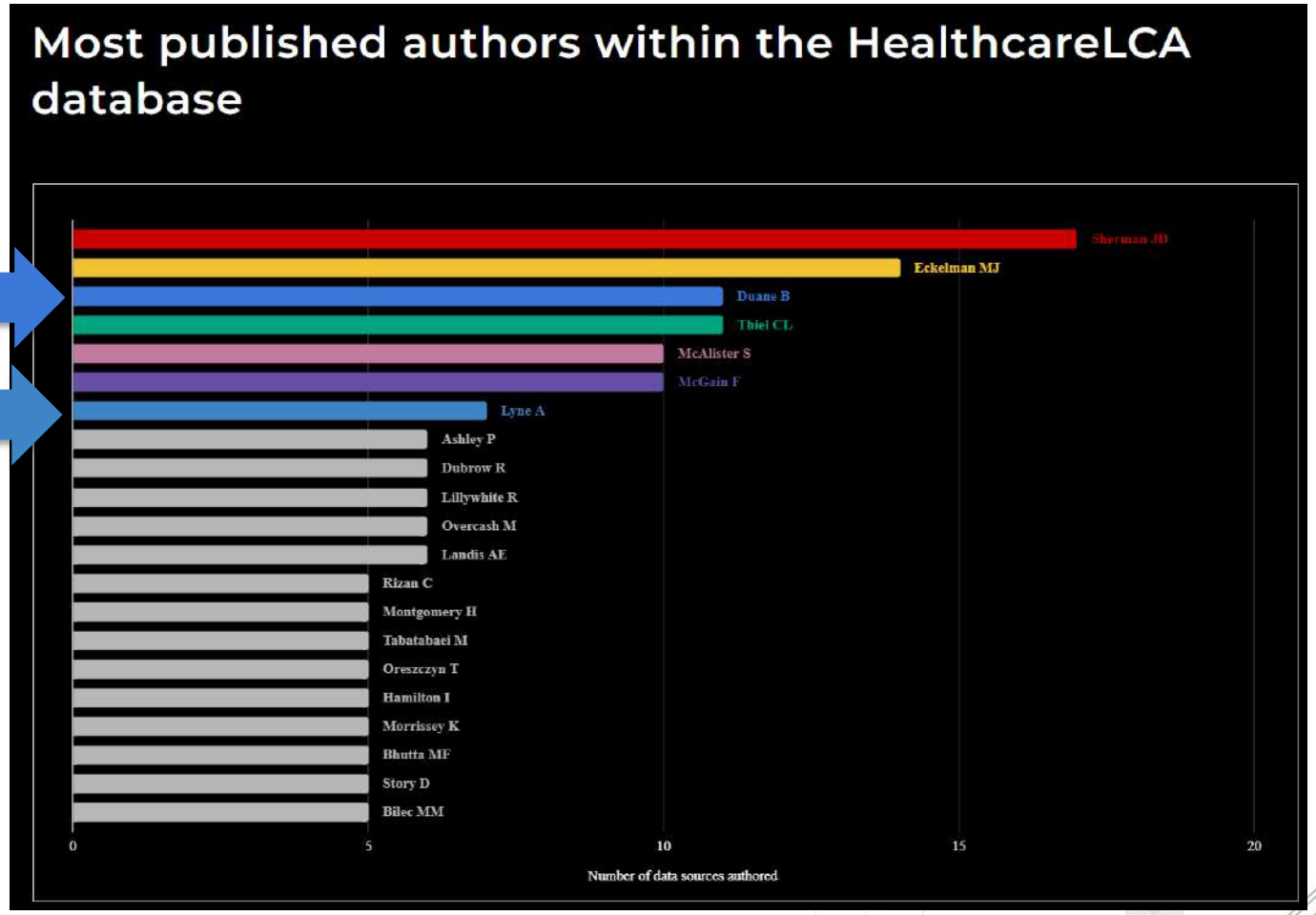
Combining evidence-based healthcare with environmental sustainability: using the toothbrush as a model

Alexandra Lyne,*[1] Paul Ashley,[2] Sophie Saget,[3] Marcela Porto Costa,[4] Benjamin Underwood[5] and Brett Duane[6]

Key points

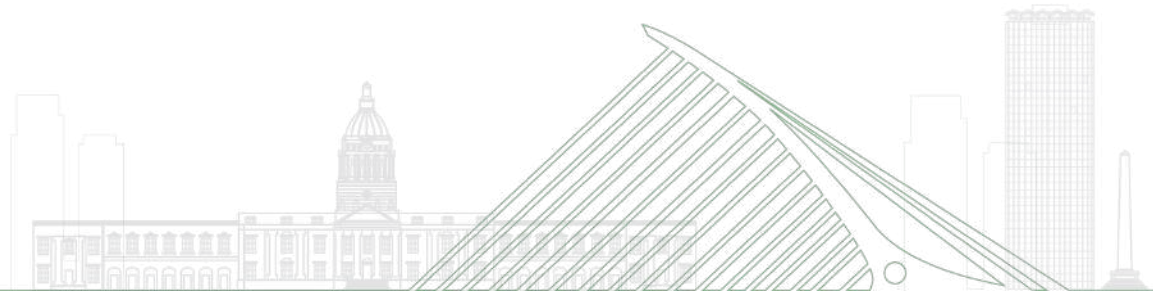
This is the first study to quantify the environmental impact of electric and manual toothbrushes, including bamboo and replaceable-head manual brushes.	Dentists and dental care professionals should use the results of this study when recommending toothbrushes to patients.	The results of this study could be used to inform NHS policy and procurement for dental public health programmes.[1]

Snowballed into many more LCAs…



Supervising sustainability

Research, audit, service improvement

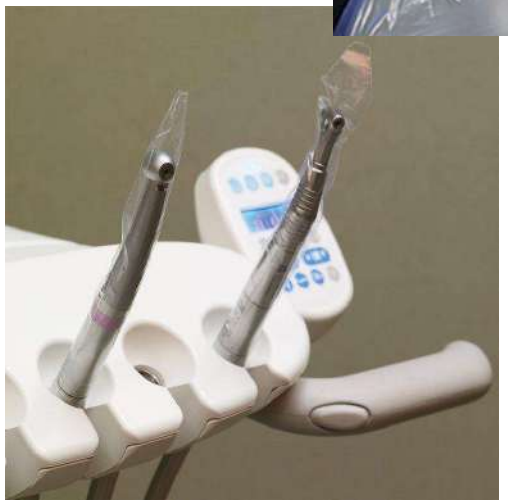


Sarah (PG student)

1. Nitrous oxide (N2O) is a greenhouse gas – used in inhalation sedation in dentistry
2. 3 year DDent:
   - Year 1: Literature review
   - Year 2: QI project with 4 cycles – how to use less gas but get same patient benefit, achieved a 20% reduction in carbon footprint of N2O in our hospital
   - Year 3: Developed toolkit and qualitative work

Diya
(2 years post-qualification)

1. LCA on video vs face-to-face clinic appointment
2. Surveyed patient & staff travel
3. Estimated computer use
4. Calculated environmental savings of video appointment



Meg & Ali (1st year post-qualification)

1. Noticed inconsistency between dental practices on single-use barrier plastics
2. Surveyed local practices & did a simple carbon footprint based on weight of that plastic + cost estimations
3. Gave practices their data, re-surveyed 3 months later, found carbon and cost savings

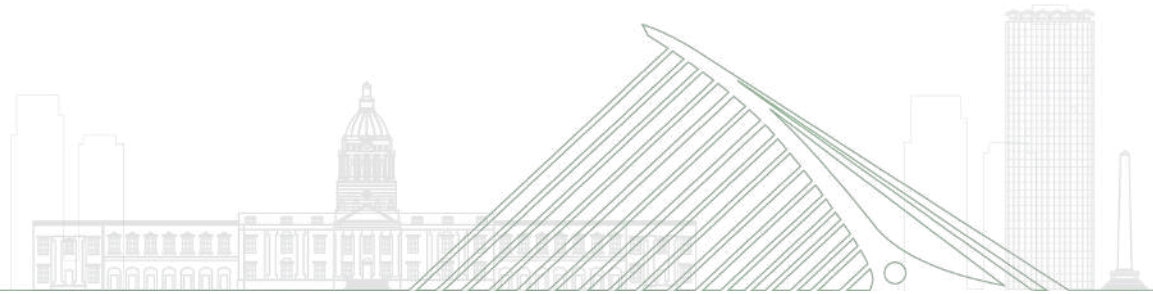
Research | Published: 27 September 2024

Reducing single-use plastics in dental practice: a quality improvement project

Ali Hashemizadeh, Alexandra Lyne & Meg Liddicott

British Dental Journal **237**, 483–486 (2024) | Cite this article

852 Accesses | **5** Citations | **2** Altmetric | Metrics



Hasan (PG student)

1. Noticed discrepancy in our glove use on clinic vs in theatre
2. Did an LCA on sterile vs non-sterile gloves
3. Took results to our infection control team & agreed new protocol for our glove use
4. Calculated environmental savings of that change
5. Hasan is now the founder of the Saudi Sustainable Oral Healthcare Initiative, and works with FDI

Non-sterile examination gloves and sterile surgical gloves: which are more sustainable?

H. Jamal [a], A. Lyne [a], P. Ashley [a], B. Duane [b]

Show more

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https://doi.org/10.1016/j.jhin.2021.10.001 Get rights and content

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Tips for getting started

#1

Pick a small / defined problem (or part of a problem)

#2

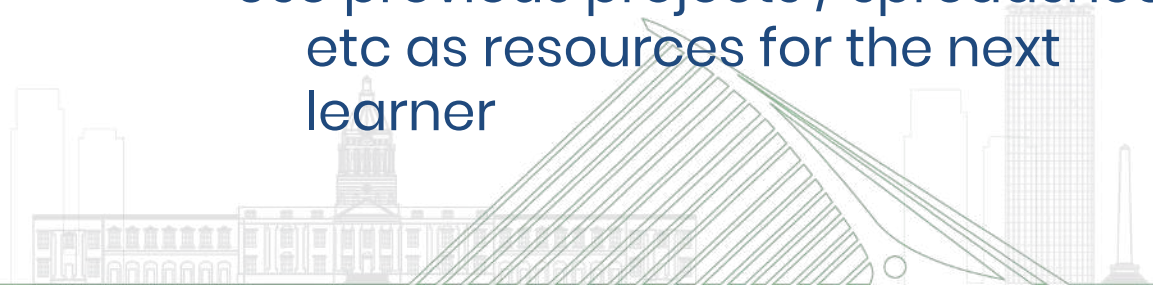
Give your learners time, start with small tasks

#3

Encourage peer review early on – what to include / exclude from the LCA or carbon footprint

#4

Use previous projects / spreadsheets etc as resources for the next learner



Jonnie's journey

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ADEE ANNUAL MEETING
20•22 AUGUST 2025
DUBLIN IRELAND

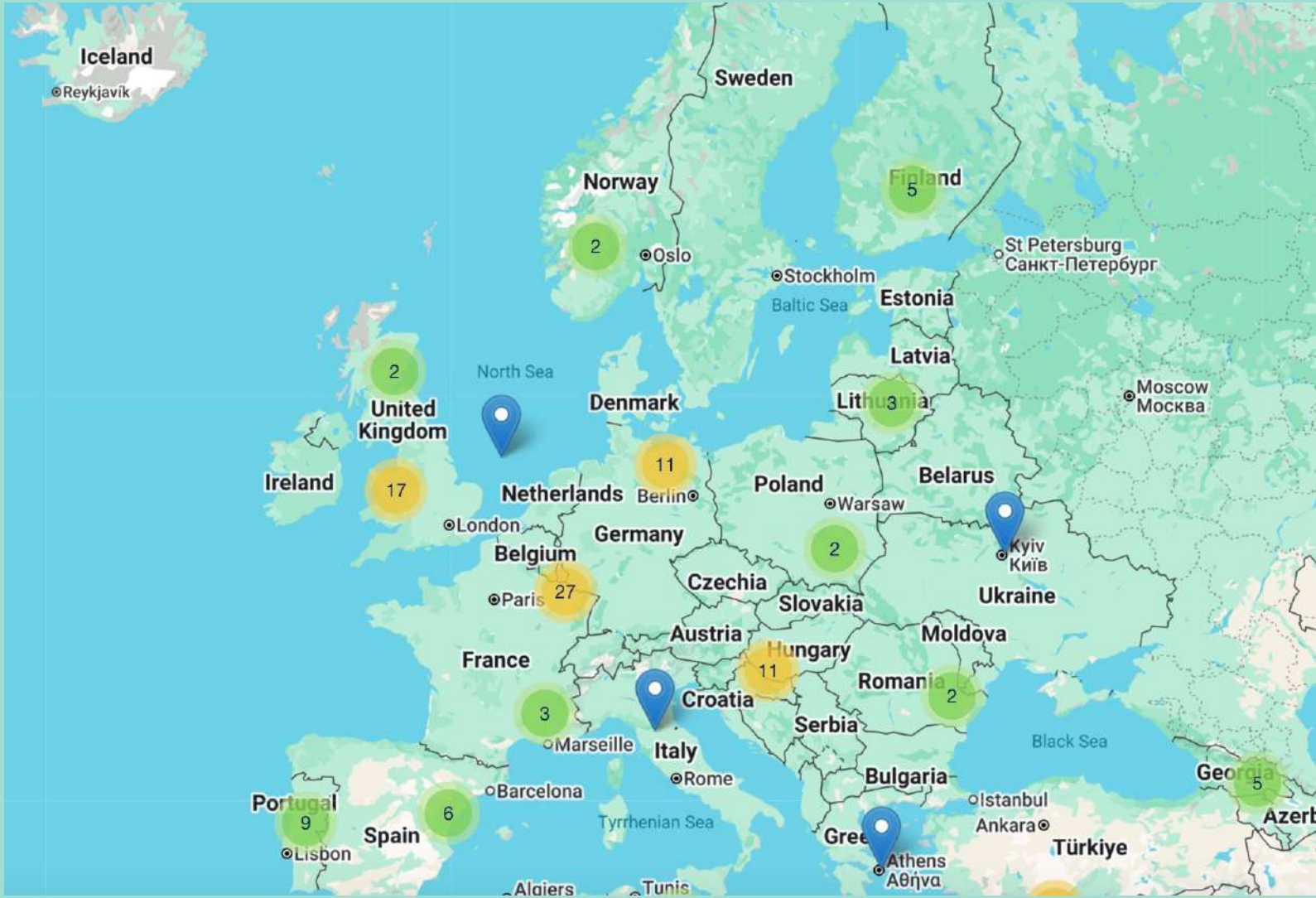
50 ANNIVERSARY

Embedding environmental sustainability in the oral health professional curriculum

Dr Jonathan Dixon BDS (Hons), MSc, PhD, PGCert (MID), PGCert (MedEd), MFDS MDTFEd RCSEd, SFHEA

University of Sheffield

Situational Analysis & Needs Assessment



Situational Analysis of ES in OHP Education

European Journal of Dental Education

WILEY

ORIGINAL ARTICLE OPEN ACCESS

Environmental Sustainability in Oral Health Professional Education: Approaches, Challenges, and Drivers—ADEE Special-Interest Group Report

Jonathan Dixon[1] | James Field[2] | Maria van Harten[3] | Brett Duane[3] | Nicolas Martin[1]

[1]School of Clinical Dentistry, University of Sheffield, Sheffield, UK | [2]Cardiff University, Cardiff, UK | [3]Trinity College Dublin, Dublin, Ireland

O-Health-Edu

Co-funded by the Erasmus+ Programme of the European Union

OPEN | EDUCATION

Current practice, barriers and drivers to embedding environmental sustainability in undergraduate dental schools in the UK and Ireland

Jonathan Dixon,*[1] Nicolas Martin[1] and James Field[2]

Key points

Environmental sustainability is an emerging topic in undergraduate dental curricula.	There is significant support from universities, staff, students and regulators to embed environmental sustainability in the curriculum.	Most dental schools are not currently teaching this topic; however, many have plans to do so after the recent General Dental Council learning outcomes update.	Many schools are facing challenges in teaching this topic in clinical environments.

ORIGINAL ARTICLE

WILEY

O-Health-Edu: A viewpoint into the current state of oral health professional education in Europe: Part 2: Curriculum structure, facilities, staffing and quality assurance

Jonathan Dixon[1] | Stephanie Tubert-Jeannin[2] | Julia Davies[3] | Maria van Harten[4,5] | Valerie Roger-Leroi[2] | Sibylle Vital[6] | Corrado Paganelli[7] | Ilze Akota[8] | Maria Cristina Manzanares-Cespedes[9] | Denis Murphy[5] | Gabor Gerber[10] | Barry Quinn[5,11] | James Field[12]

University of Sheffield

Reported Challenges

The most common barriers to embedding ES in the curriculum reported by the group were:

1. Time constraints within the existing curriculum

2. Lack of knowledge/expertise to teach ES

3. Lack of practical guidance

European Journal of Dental Education

WILEY

ORIGINAL ARTICLE OPEN ACCESS

Environmental Sustainability in Oral Health Professional Education: Approaches, Challenges, and Drivers—ADEE Special-Interest Group Report

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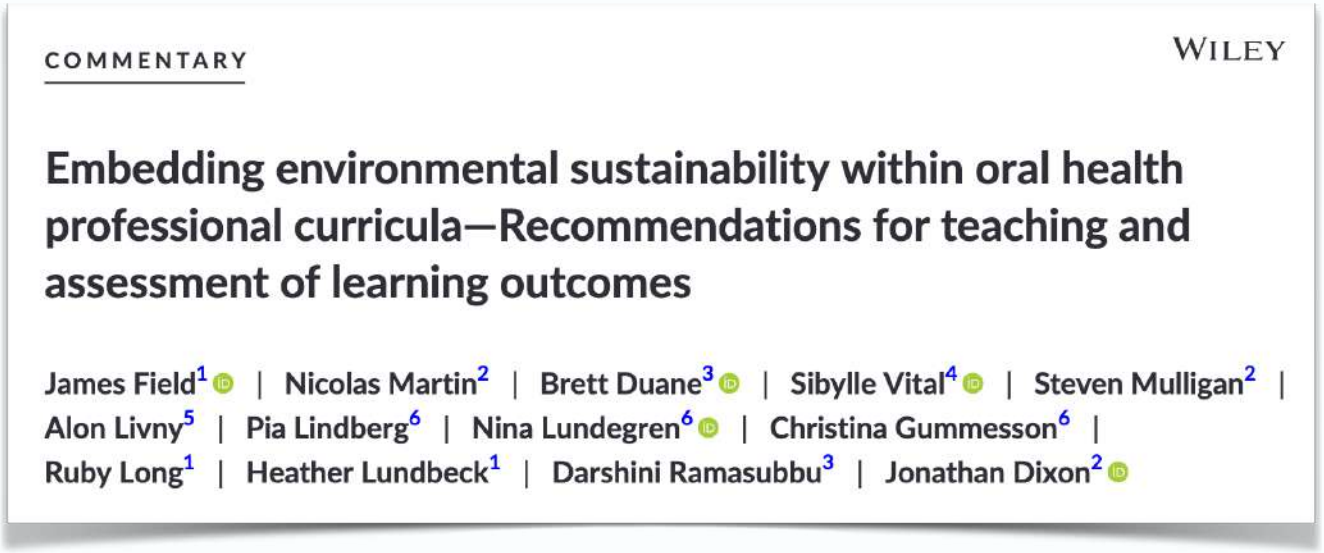
[1]School of Clinical Dentistry, University of Sheffield, Sheffield, UK | [2]Cardiff University, Cardiff, UK | [3]Trinity College Dublin, Dublin, Ireland

University of Sheffield

Learning Outcomes & Teaching and Assessment Methods

Learning Outcomes for ES



COMMENTARY

WILEY

Embedding environmental sustainability within oral health professional curricula—Recommendations for teaching and assessment of learning outcomes

James Field[1] | Nicolas Martin[2] | Brett Duane[3] | Sibylle Vital[4] | Steven Mulligan[2] | Alon Livny[5] | Pia Lindberg[6] | Nina Lundegren[6] | Christina Gummesson[6] | Ruby Long[1] | Heather Lundbeck[1] | Darshini Ramasubbu[3] | Jonathan Dixon[2]

i. **Describe the main principles relating to sustainable oral health care, both environmentally and in terms of patient compliance, and the factors that might affect implementing a sustainable approach.**

ii. **Evaluate and apply the evidence base in relation to the environmental impacts of common treatment methods and approaches to the delivery of oral healthcare.**

iii. **Develop effective patient-specific strategies for preventive oral health, reducing the need for recall, operative intervention, and material use.**

Teaching and Assessment Methods

European Journal of Dental Education

WILEY

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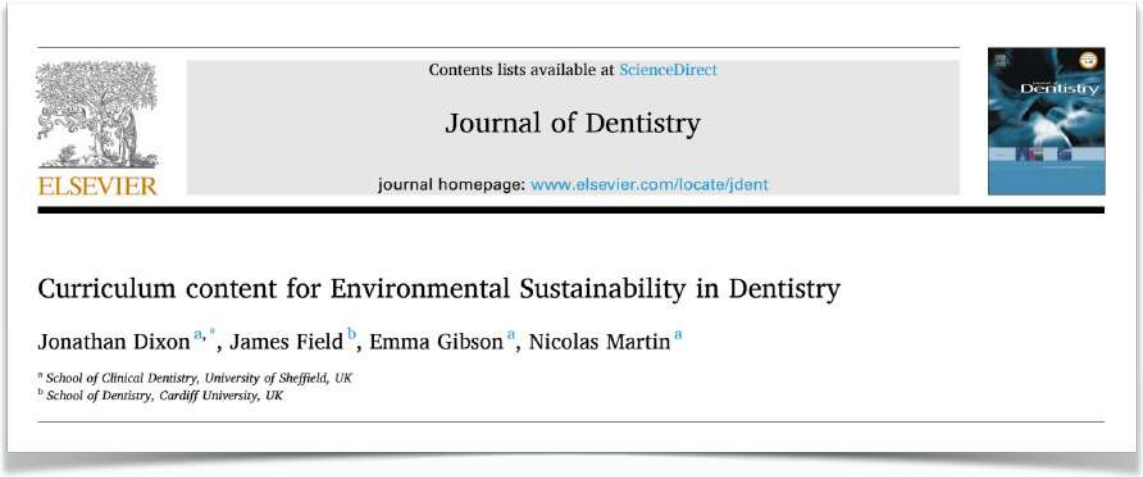


Contents lists available at ScienceDirect

Journal of Dentistry

journal homepage: www.elsevier.com/locate/jdent

ELSEVIER

Curriculum content for Environmental Sustainability in Dentistry

Jonathan Dixon[a,*], James Field[b], Emma Gibson[a], Nicolas Martin[a]

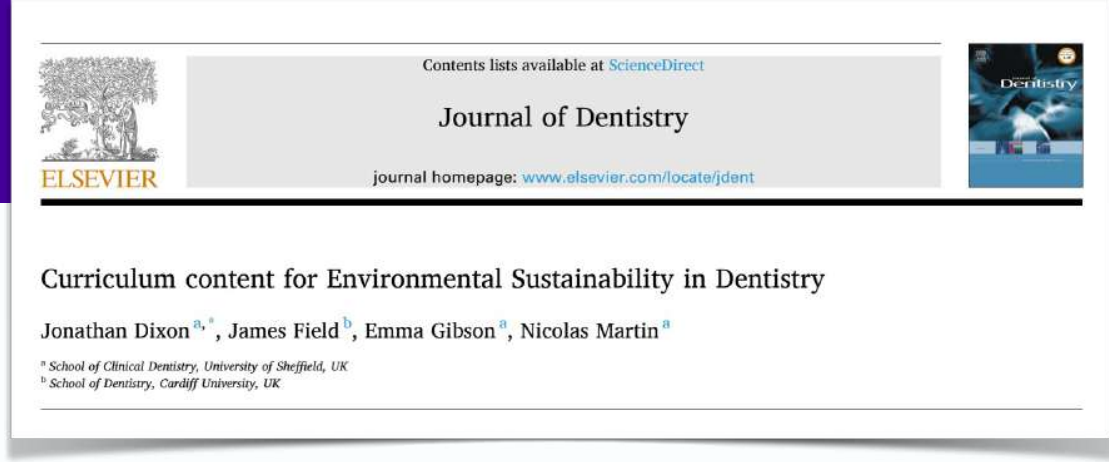
[a] School of Clinical Dentistry, University of Sheffield, UK
[b] School of Dentistry, Cardiff University, UK

Scope of Teaching	Teaching Methods Selected
Core environmental sustainability/planetary health content	1. FDI 'Sustainability in Dentistry' MOOC 2. Standalone 'Environmental Sustainability in Oral Healthcare' Lecture
The environmental impacts of oral healthcare across all disciplines	3. Incorporate ES into existing teaching
Practical application of sustainable oral healthcare	4. Case-based discussions, incorporation into simulation environments

University of Sheffield

Curriculum content for ES in Dentistry

Subject-specific ES content



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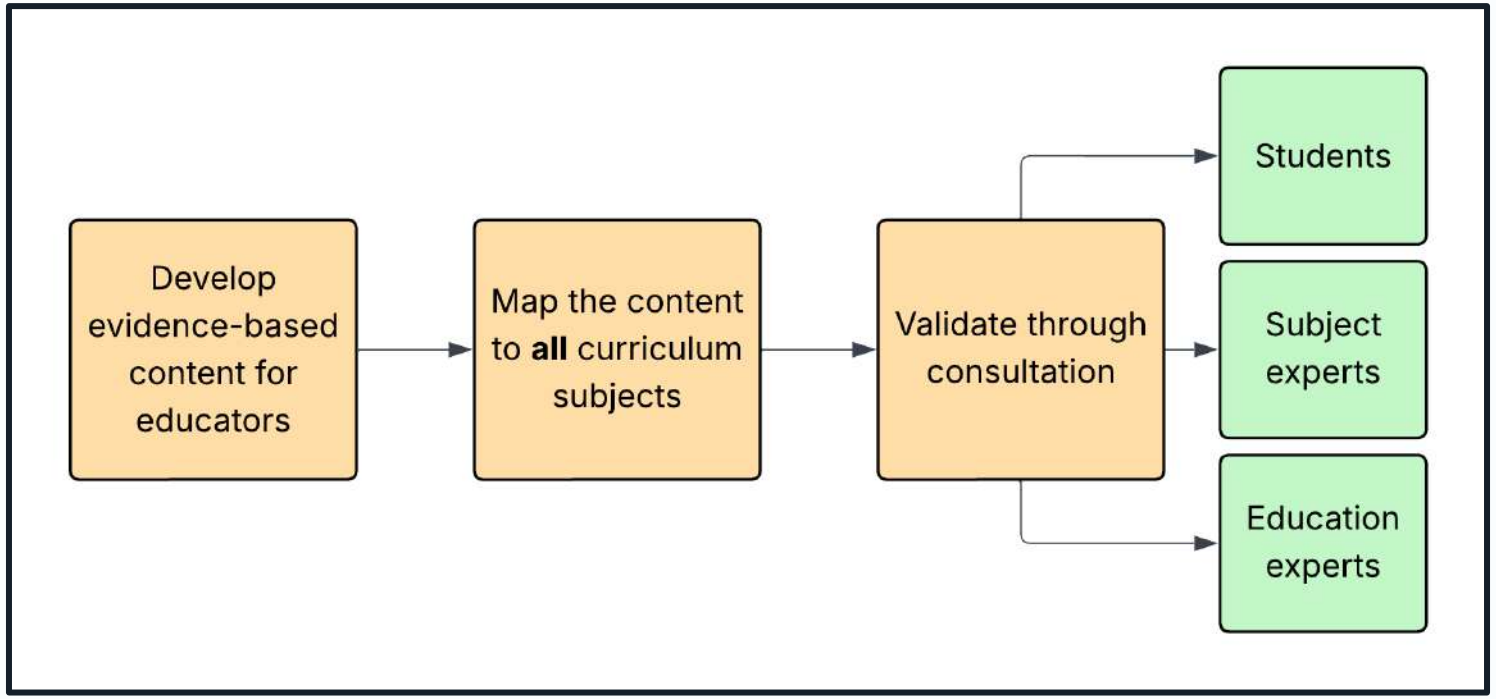
Curriculum content for Environmental Sustainability in Dentistry

Jonathan Dixon [a,*], James Field [b], Emma Gibson [a], Nicolas Martin [a]

[a] School of Clinical Dentistry, University of Sheffield, UK
[b] School of Dentistry, Cardiff University, UK

How can we support educators in incorporating evidence-based ES content in their teaching?



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FDI Sustainability in Dentistry

Sustainability

Basic Sciences

Slide Deck

Read more

Sustainability

Cariology

Slide Deck

Read more

Sustainability

Conservative Dentistry

Slide Deck

Read more

Sustainability

Dental Biomaterials

Slide Deck

Read more

Sustainability

Ethics, Professionalism, Information Literacy, Social Accountability and Behavioural Sciences

Slide Deck

Read more

Sustainability

Oral and Maxillofacial Radiology

Slide Deck

Read more

Sustainability

Oral and Maxillofacial Surgery

Slide Deck

Read more

Sustainability

Oral Implantology

Slide Deck

Read more

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FDI World Dental Federation

University of Sheffield

Implementing & Evaluating the Change

Plan of Action

	1st BDS	2nd BDS & 1st DH&DT	2nd DH&DT	3rd BDS	4th BDS	5th BDS
FDI 'Sustainability in Dentistry' MOOC	1 event (3 hours)		1 event (3 hours)	1 event (3 hours)		
'Environmental Sustainability in Dentistry' lecture		1 event				
Embed ES content into existing events (content statements/slide decks)	2 events	10 events		3 events	7 events	
Clinical case-based discussion including ES					1 event	1 event

Evaluation

- Pre- and post-intervention surveys to assess change in dental student's awareness, attitudes and knowledge to ES in dentistry.
- 270 matched responses (69% response rate).
- Statistically significant positive changes in awareness, attitudes and knowledge of ES in dentistry across all years of study.

Journal of Dentistry 156 (2025) 105710

Contents lists available at ScienceDirect

Journal of Dentistry

journal homepage: www.elsevier.com/locate/jdent

Longitudinal integration of environmental sustainability in the dental curriculum: Assessing changes in student awareness, attitudes and knowledge

Jonathan Dixon [a,*], Harriet M. Baird [b], James Field [c], Nicolas Martin [a]

[a] School of Clinical Dentistry, University of Sheffield, UK
[b] School of Psychology, University of Sheffield, UK
[c] School of Dentistry, Cardiff University, UK

A Model for Sustainable Curriculum Development in Dentistry

Jonathan Dixon[1] | Nicolas Martin[1] | Sibylle Vital[2,3] | Julia R. Davies[4] | Denis Murphy[5] | James Field[6]

[1]University of Sheffield, Sheffield, UK | [2]Université Paris Cite, Paris, France | [3]AP-HP, Department of Odontology, Louis Mourier Hospital, Colombes, France | [4]Malmö University, Malmö, Sweden | [5]Association for Dental Education in Europe (ADEE), Dublin, Ireland | [6]Cardiff University, Cardiff, UK

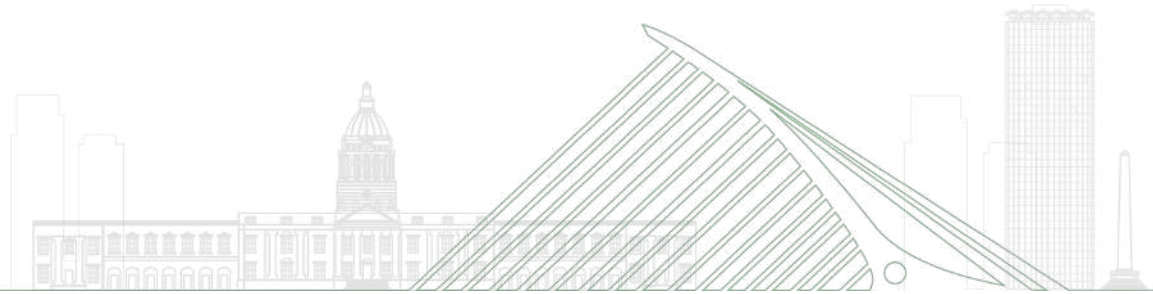
Correspondence: Jonathan Dixon (jonathan.dixon@sheffield.ac.uk)

Received: 25 April 2025 | **Revised:** 26 May 2025 | **Accepted:** 27 May 2025

Funding: The authors received no specific funding for this work.

Keywords: curriculum | curriculum development | dental | environmental sustainability | oral health professional | sustainable

Nina's journey



Sustainability In the Dental Education at Malmö University, Sweden

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MALMÖ UNIVERSITY

An introduction to sustainability in dentistry – 2nd semester:

1. Individual preparation – Reading

- Which of the SDGs are central to dental care? Why?
- In what way is dental care connected to the global goals?
- How can preventive dental care, as well as the treatments you are familiar with, contribute positively and negatively to the global goals?

2. Preparation in the study group

- Record a short video clip on how they can achieve the course objective for sustainability
- Create a quiz

3. Seminar

- Quiz based on the students' questions
- Literature search:
    1. 2 scientific articles that address some sustainability aspects and dental care.
    2. What has been done? What are the key results?
- Oral presentation of articles

Throughout the clinical practice (semester 3-10)

Criteria for reflections:

- Sustainability
- Preparation
- Planning

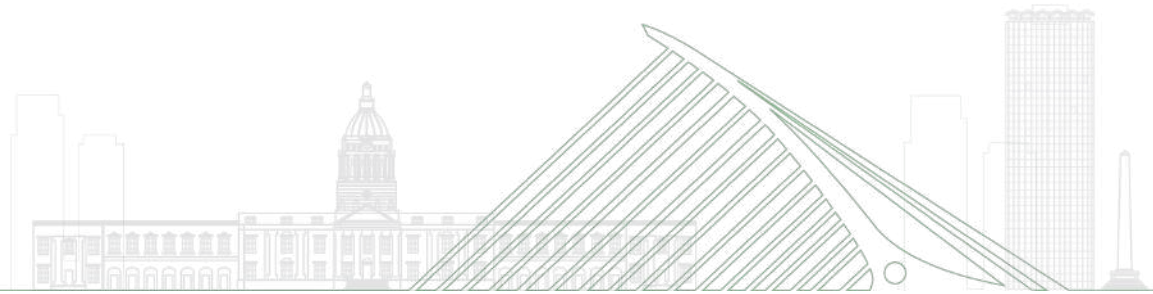


Master thesis (semester 10)

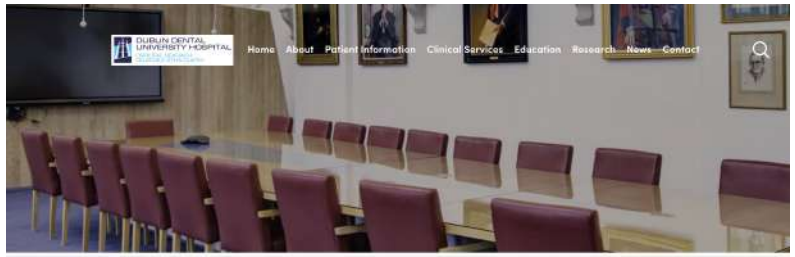
Criteria:

Critically discuss and evaluate the results in relation to dental care, society, and sustainability

The DDUH's journey



Before you start



Hospital Board

Dublin Dental University Hospital
Ospidéal Déadach Ollscoile Átha Cliath

2023-2026 Strategic Plan

51%
Reduction in GHG emissions by 2030

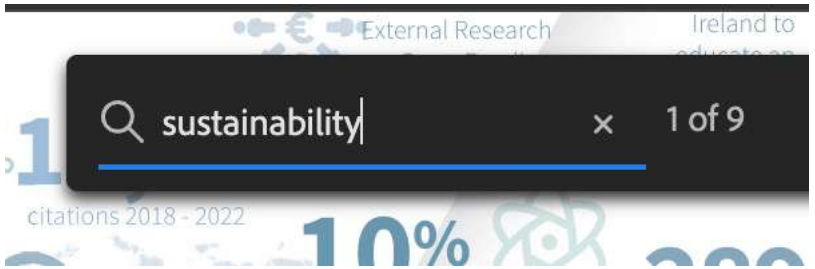
50%
Improvement in energy efficiency by 2030

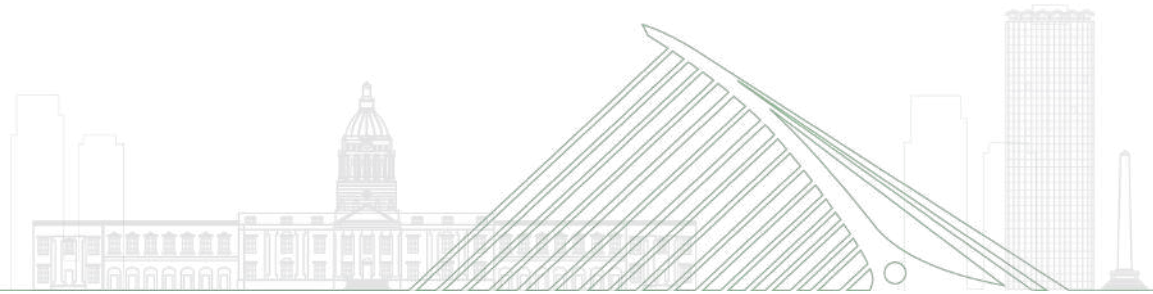
The 2030 targets

By 2030, every public sector organisation is required to achieve:

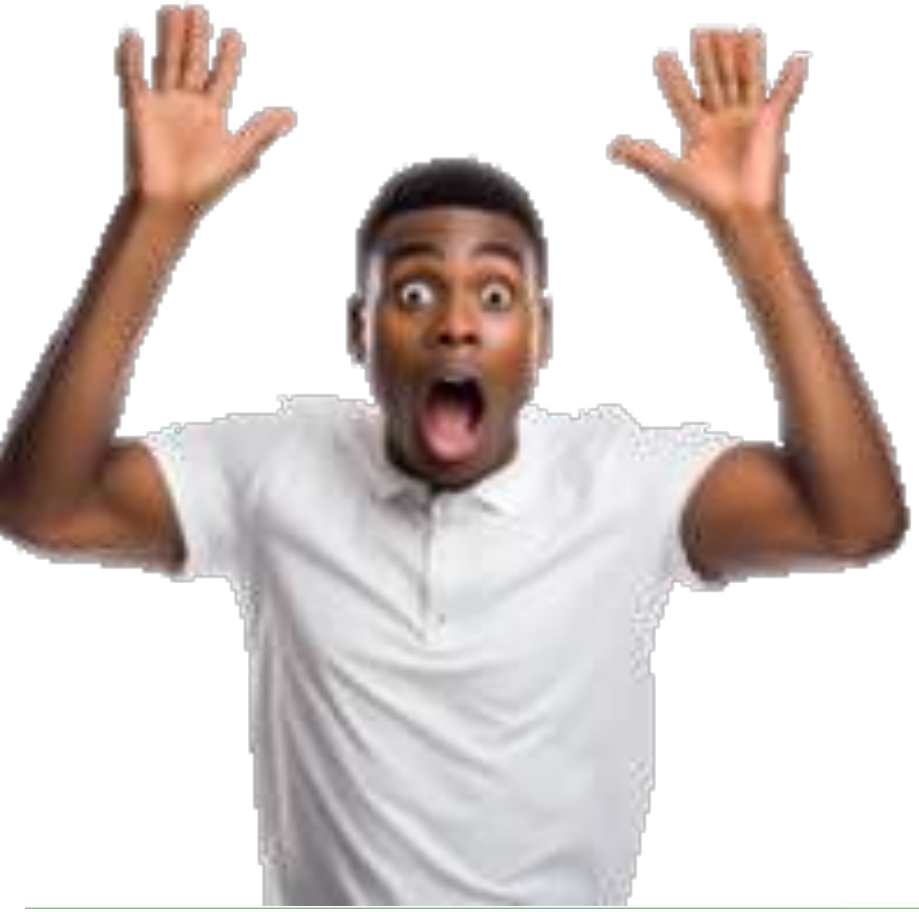
- 51% reduction in energy-related greenhouse gas (GHG) emissions
- 51% reduction in thermal (heating and transport) related greenhouse gas emissions
- 50% improvement in energy efficiency

Achieving the 2030 targets will require a renewed effort and long-term strategic planning to secure resources and investment.





DDUH Sustainability Strategy



Measuring the baseline carbon footprint

Who has?

A carbon calculator: the development of a user-friendly greenhouse gas measuring tool for general dental practice (Part 2)

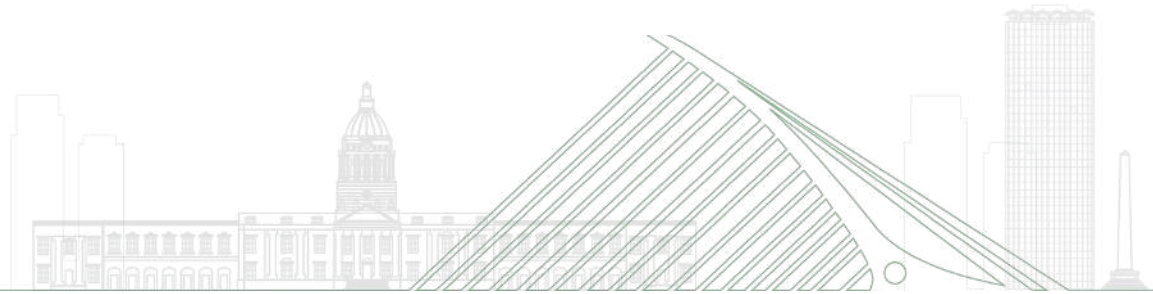
Brett Duane,*[1] Ingeborg Steinbach[2] and Louis Mackenzie[3]

Key points

The paper introduces a simplified carbon calculator designed for dental practices which allows practices to estimate their carbon footprints using conversion factors.

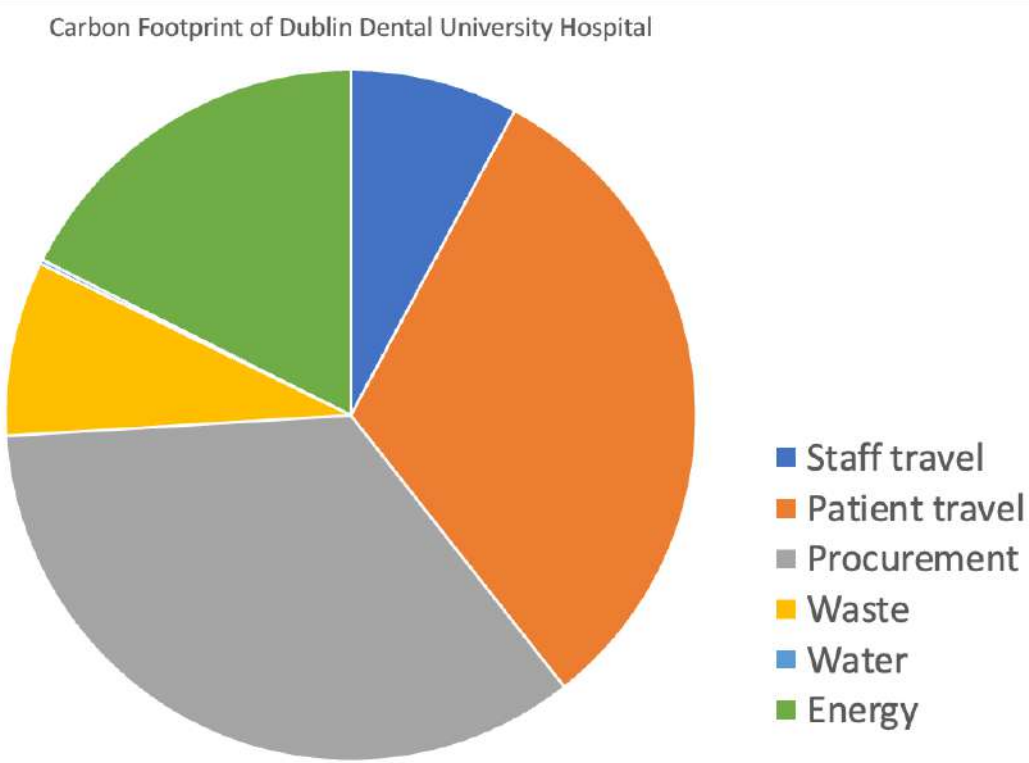
The calculator aims to serve as an accessible tool for practices to measure and monitor their carbon emissions, supporting their contribution to environmental sustainability.

The paper acknowledges uncertainties in the procurement and waste management aspects of carbon accounting and suggests avenues for more detailed and accurate carbon footprinting.



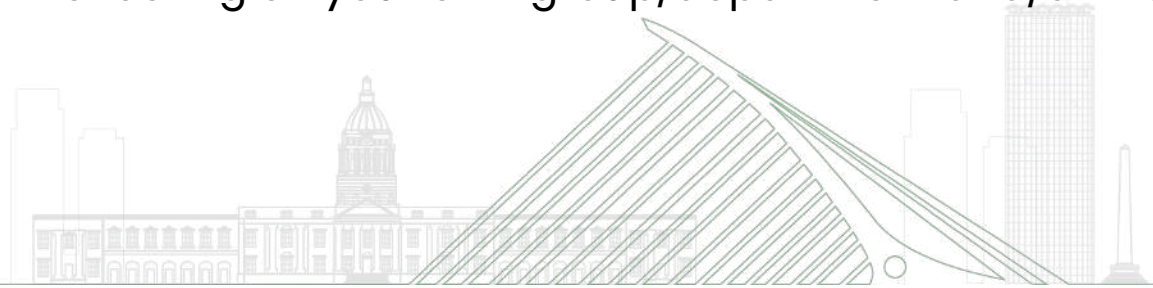
Practice information	*Change the green cells*	*Conversion figures ignore these*		
How many days is the practice open on an average year?	364.0			
How many full time staff in the practice?	211.6			
How many patients visits does the practice see every year?	46163.0			
This week (make sure it's a normal week)				
Staff travel (MILES)				
How far do **all** staff travel return **to work** or **for work** by car.	3076.4	0.3300	118698.7	← **Annualised Staff travel CFP**
Patient travel (MILES)				
Do the simple patient survey for 30 patients (see notes) and total the distance of all patients travel by each method				
Petrol/Diesel Car	363.3	0.3300	296288.0	
Electric Car	90.8	0.1830	25568.8	
Bus	287.2	0.1500	66290.1	
Train	292.4	0.1900	85487.7	
Motorbike	8.3	0.1600	2043.5	
Bike/Walk	15.6	0.0000	0.0	
			475678.0	←**Annualised patient travel CFP**
Waste				
Total number of bags of				
Plastic waste for recycling	89.0	0.0000	0.0	
Cardboard waste for recycling	0.0	0.0000	0.0	
Infectious waste for incineration	*187.0*	7.5869	1418.7	
Domestic waste for disposal	239.0	1.1558	276.2	
			123395.4	←**Annualised waste CFP**
This year (make sure it's a normal year)				
Energy				
in KWh				
Standard electricity	452150.5	0.2749	124277.8	
Green electricity	0.0	0.0110	0.0	
Solar power on your roof	0.0	0.0410	0.0	
Gas	671286.3	0.2100	140970.1	
			265247.9	←**Annualised energy CFP**
Water				
Water usage in Metres cubed	8798.0	0.3378	2972.0	←**Annualised water CFP**
Procurement: The things you buy: How much did you spend on other things, equipment, materials in pounds stirling £ (don't include rent, interest)	3977135.6	0.1315	522863.5	←**Annualised procurement CFP**
Your results for your practice			**1508855.5**	**Kg of carbon**
The CFP of your average patient			**32.7**	**Kg of carbon**

Why measure?


Carbon Footprint of Dublin Dental University Hospital
Staff travel
Patient travel
Procurement
Waste
Water
Energy

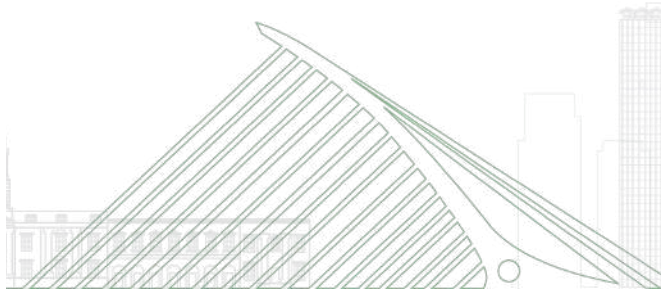
Staff and student questionnaire:

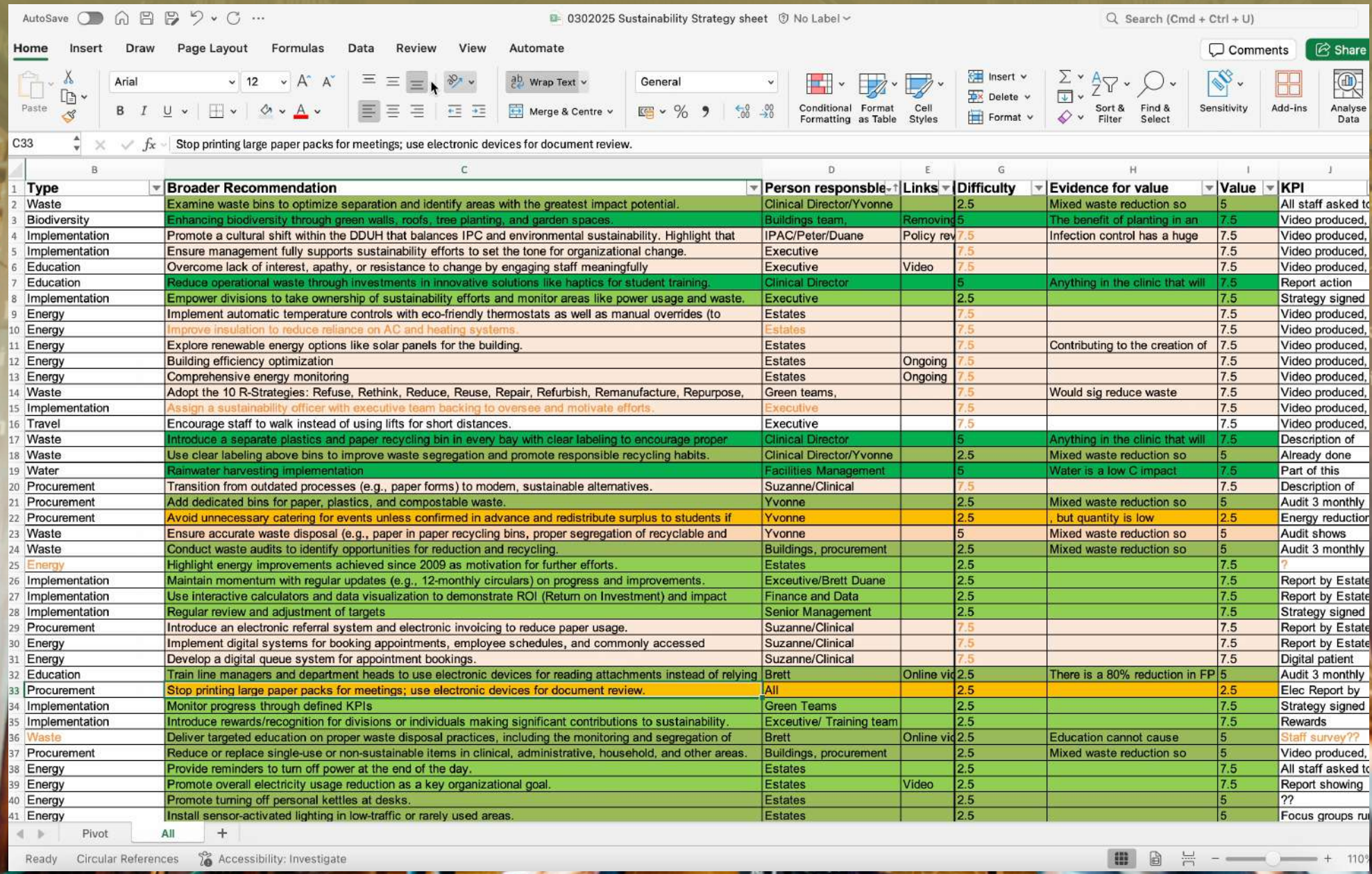
1. Within DDUH, which group best fits your role description?
2. If you are a staff member, which department most represents your role?
3. What is your current level of knowledge of sustainability?
4. How important is sustainability to you at this time?
5. Regarding environmental sustainability, what do you think are the key issues for DDUH?
6. Could you suggest some possible goals or ideas relating to the issues you have identified?
7. What specific activities would be required to achieve your suggested goals/ideas?
8. How would you measure success regarding your suggested goals/ideas?
9. What do you think will be the key challenges for becoming more environmentally sustainable at DDUH?
10. Would you be interested in training in the area of sustainable healthcare?
11. Have you any suggestions regarding training when reflecting on your own group/department and/or the wider hospital?
12. Have you any other comments or suggestions?



Feedback from staff

Row Labels
Biodiversity
Formula1
Enhancing biodiversity through green walls, roofs, tree planting, and garden spaces.
Introduce more natural plants into the hospital to improve aesthetics and air quality while reinforcing the organization's commitment to sustainability.
Education
Allocate time for educating staff and students about sustainability goals and practices. Train students, clinical staff, and procurement teams to use resources efficiently and identify sustainable materials. Provide clear, actionable information through posters, reminders, and pictograms. Embed sustainability in training days and regular discussions to create a collective consciousness.
Formula1
Educate staff on sustainable energy use and provide visible reminders.
Engage staff in green campaigns to raise awareness of reducing plastic use and encourage active participation.
Enhance training on the efficient use of dental materials, focusing on minimizing waste and selecting environmentally friendly products without compromising quality.
Innovation in sustainable dentistry
Overcome lack of interest, apathy, or resistance to change by engaging staff meaningfully
Provide clear and accessible guidance on how to recycle properly through training sessions and educational materials.
Provide education and communication that reframes sustainability as a complementary, not conflicting, priority to IPC.
Reduce operational waste through investments in innovative solutions like haptics for student training.
Sustainability curriculum integration through all training materials
Train line managers and department heads to use electronic devices for reading attachments instead of relying on printed documents.
Train staff and students on correct recycling practices and the importance of accurate waste disposal to reduce contamination and improve recycling efficiency.
Energy
Implementation
Infection control
Formula1
Engage the IPC Committee
Review infection protocols in surgical suites - ?need for plastic shoe covers, nail brushes?
Procurement
Travel
Waste
Address the lack of recycling facilities and ensure proper segregation across all areas including dental units and common rooms.
Adopt the 10 R-Strategies: Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover.
Avoid automatically binning items like dental trays that fall on the floor if they can be sanitized (e.g., with alcohol wipes).
Clearly label recycling bins to make proper disposal easier for staff and visitors.
Conduct audits as part of audit work to track behaviors like recycling, paper retention, and the use of disposable items. Use KPIs such as "printed pages per person" or "disposable items per clinic" to track progress.
Formula1
Conduct waste audits to identify opportunities for reduction and recycling.
Deliver targeted education on proper waste disposal practices, including the monitoring and segregation of waste in areas like common rooms.
Develop systems to compost waste where feasible.
Don't buy tetrapak milk containers, Recycle plastic milk cartons and remove single-use plastic items like cups from common areas.
Educate staff and students on broader sustainability practices, such as energy conservation and proper recycling.
Encourage a paper-free environment by removing printers or restricting them to one per floor.





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Arial 12 Wrap Text General Conditional Formatting Format as Table Cell Styles Insert Delete Format Sort & Filter Find & Select Sensitivity Add-ins Analyse Data

C33 Stop printing large paper packs for meetings; use electronic devices for document review.

	Type	Broader Recommendation	Person responsble	Links	Difficulty	Evidence for value	Value	KPI
2	Waste	Examine waste bins to optimize separation and identify areas with the greatest impact potential.	Clinical Director/Yvonne		2.5	Mixed waste reduction so	5	All staff asked to
3	Biodiversity	Enhancing biodiversity through green walls, roofs, tree planting, and garden spaces.	Buildings team,	Removing	5	The benefit of planting in an	7.5	Video produced,
4	Implementation	Promote a cultural shift within the DDUH that balances IPC and environmental sustainability. Highlight that	IPAC/Peter/Duane	Policy rev	7.5	Infection control has a huge	7.5	Video produced,
5	Implementation	Ensure management fully supports sustainability efforts to set the tone for organizational change.	Executive		7.5		7.5	Video produced,
6	Education	Overcome lack of interest, apathy, or resistance to change by engaging staff meaningfully	Executive	Video	7.5		7.5	Video produced,
7	Education	Reduce operational waste through investments in innovative solutions like haptics for student training.	Clinical Director		5	Anything in the clinic that will	7.5	Report action
8	Implementation	Empower divisions to take ownership of sustainability efforts and monitor areas like power usage and waste.	Executive		2.5		7.5	Strategy signed
9	Energy	Implement automatic temperature controls with eco-friendly thermostats as well as manual overrides (to	Estates		7.5		7.5	Video produced,
10	Energy	Improve insulation to reduce reliance on AC and heating systems.	Estates		7.5		7.5	Video produced,
11	Energy	Explore renewable energy options like solar panels for the building.	Estates		7.5	Contributing to the creation of	7.5	Video produced,
12	Energy	Building efficiency optimization	Estates	Ongoing	7.5		7.5	Video produced,
13	Energy	Comprehensive energy monitoring	Estates	Ongoing	7.5		7.5	Video produced,
14	Waste	Adopt the 10 R-Strategies: Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose,	Green teams,		7.5	Would sig reduce waste	7.5	Video produced,
15	Implementation	Assign a sustainability officer with executive team backing to oversee and motivate efforts.	Executive		7.5		7.5	Video produced,
16	Travel	Encourage staff to walk instead of using lifts for short distances.	Executive		7.5		7.5	Video produced,
17	Waste	Introduce a separate plastics and paper recycling bin in every bay with clear labeling to encourage proper	Clinical Director		5	Anything in the clinic that will	7.5	Description of
18	Waste	Use clear labeling above bins to improve waste segregation and promote responsible recycling habits.	Clinical Director/Yvonne		2.5	Mixed waste reduction so	5	Already done
19	Water	Rainwater harvesting implementation	Facilities Management		5	Water is a low C impact	7.5	Part of this
20	Procurement	Transition from outdated processes (e.g., paper forms) to modern, sustainable alternatives.	Suzanne/Clinical		7.5		7.5	Description of
21	Procurement	Add dedicated bins for paper, plastics, and compostable waste.	Yvonne		2.5	Mixed waste reduction so	5	Audit 3 monthly
22	Procurement	Avoid unnecessary catering for events unless confirmed in advance and redistribute surplus to students if	Yvonne		2.5	, but quantity is low	2.5	Energy reduction
23	Waste	Ensure accurate waste disposal (e.g., paper in paper recycling bins, proper segregation of recyclable and	Yvonne		5	Mixed waste reduction so	5	Audit shows
24	Waste	Conduct waste audits to identify opportunities for reduction and recycling.	Buildings, procurement		2.5	Mixed waste reduction so	5	Audit 3 monthly
25	Energy	Highlight energy improvements achieved since 2009 as motivation for further efforts.	Estates		2.5		7.5	?
26	Implementation	Maintain momentum with regular updates (e.g., 12-monthly circulars) on progress and improvements.	Exceutive/Brett Duane		2.5		7.5	Report by Estate
27	Implementation	Use interactive calculators and data visualization to demonstrate ROI (Return on Investment) and impact	Finance and Data		2.5		7.5	Report by Estate
28	Implementation	Regular review and adjustment of targets	Senior Management		2.5		7.5	Strategy signed
29	Procurement	Introduce an electronic referral system and electronic invoicing to reduce paper usage.	Suzanne/Clinical		7.5		7.5	Report by Estate
30	Energy	Implement digital systems for booking appointments, employee schedules, and commonly accessed	Suzanne/Clinical		7.5		7.5	Report by Estate
31	Energy	Develop a digital queue system for appointment bookings.	Suzanne/Clinical		7.5		7.5	Digital patient
32	Education	Train line managers and department heads to use electronic devices for reading attachments instead of relying	Brett	Online vid	2.5	There is a 80% reduction in FP	5	Audit 3 monthly
33	Procurement	Stop printing large paper packs for meetings; use electronic devices for document review.	All		2.5		2.5	Elec Report by
34	Implementation	Monitor progress through defined KPIs	Green Teams		2.5		7.5	Strategy signed
35	Implementation	Introduce rewards/recognition for divisions or individuals making significant contributions to sustainability.	Exceutive/ Training team		2.5		7.5	Rewards
36	Waste	Deliver targeted education on proper waste disposal practices, including the monitoring and segregation of	Brett	Online vid	2.5	Education cannot cause	5	Staff survey??
37	Procurement	Reduce or replace single-use or non-sustainable items in clinical, administrative, household, and other areas.	Buildings, procurement		2.5	Mixed waste reduction so	5	Video produced,
38	Energy	Provide reminders to turn off power at the end of the day.	Estates		2.5		7.5	All staff asked to
39	Energy	Promote overall electricity usage reduction as a key organizational goal.	Estates	Video	2.5		7.5	Report showing
40	Energy	Promote turning off personal kettles at desks.	Estates		2.5		5	??
41	Energy	Install sensor-activated lighting in low-traffic or rarely used areas.	Estates		2.5		5	Focus groups ru

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Staff training video

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Interactive Session

Take-aways