Report: Cricket Clothing Upcycling Workshop

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1. Introduction

As part of the UKRI IAA funded 2C project, The Centre for Sustainable Design ® (CfSD) at The University for the Creative Arts (UCA) delivered a cricket clothing upcycling workshop with 24 UCA students from MSC/MA Global Marketing and Communications and MA Fashion Business & Management and Luxury Business & Management courses led by Dr Katie Rees and Esther Oladokun. The workshop was aligned with the units Products, Problems and Prototypes and Sustainable Business Design on the two courses and was facilitated by Professor Martin Charter and Dr Lilian Sanchez Moreno, with support from Sash Jinasena and held at UCA in Epsom on 7th May 2026. The workshop also builds on research completed within the UKRI IAA funded project, circular cricket clothing and apparel (PSCP).

This report examines the context and underlying challenges associated with the environmental impacts of cricket apparel and equipment, with particular emphasis on waste arising from the premature end-of-life of cricket clothing and the industry's dependence on fossil fuel-derived materials. It provides a review of a a innovation workshop methodology applied to the upcycling of cricket clothing, offers critical insights into concepts developed by UCA students.

The report concludes with lessons learnt from the workshop from a product development, students' engagement and process perspective. In addition, a post hoc AI assisted analysis of the workshop methodology, assessing its relationship to the United Nations Sustainable Development Goals (SDGs) and the Design Council's Skills for Planet Blueprint (SPB) which has been incorporated as an ANNEX II.

While an alignment of the workshop's aims and objectives with the UN's SDG's and the DC's Blueprint were not within the original scope, the analysis aims to highlight the value of deliberately integrating relevant sustainability frameworks and competencies into creative education curricula. Specifically, the systematic mapping of SDGs and skills-based frameworks onto pedagogical activities and project-based learning initiatives to enhance the development of sustainability-oriented knowledge, capabilities, and design practices. As such, this report also serves as a learning resource to further support the embedding of sustainability and circular economy principles within creative education. In doing so, it contributes to the aims and objectives of the 2C project, as well as to broader higher education curriculum development agendas that seek to strengthen the integration and transfer of sustainability knowledge across disciplines.

2. The Problem

Cricket clothing and apparel is used in the recreational and professional game and includes the following items: shirts, trousers, jumpers, socks, and caps. Most garments are primarily made from virgin polyester or polyester–elastane blends, due to performance, cost and sublimation printing requirements. This results in the main environmental impact relating to fossil-fuel based synthetic materials[1] and fast-paced season-based production cycles.[2] In addition, there has been a growing shift away from traditional 'whites' towards coloured and personalised clothing particularly in women's and children's recreational cricket

[1] Within the environmental impacts related to the use of synthetic materials, the authors consider the extraction of fossil fuels required for production, energy related impacts and harm on human health related to chemicals used for processing synthetic materials and the release of micro plastics.

[2] https://www.ellenmacarthurfoundation.org/articles/running-rings-why-we-need-a-circular-economy-for-sports-kit#:~:text=The%20list%20goes%20on.,transfer%20fees%20of%20Jude%20Bellingham

clothing. However, while this reflects broader consumer and aesthetic trends within the sport, it also creates additional challenges for garment reuse and end-of-life material recycling.

While there is no publicly available data that covers the market size and number of cricket clothing items consumed and used annually in England and Wales, assumptions made[3] as part of the (PCSP) project, suggest that there are an approximately 2.7 million items of cricket clothing that are sold annually in E&W. The volume of cricket clothing consumed annually suggests a significant textile waste, raising questions regarding garment longevity, end-of-life management, and opportunities for material recovery. To explore these challenges, a workshop was organised with master's students at UCA, focusing on upcycling and circular design strategies as a mean to reduce waste and extend the useful life of cricket apparel.

A workshop was organised with master's students at UCA that addressed waste issues within the cricket clothing sector to:

- Introduce participants to the principles of the circular economy and sustainable product design.
- Present findings from past and ongoing CfSD projects relating to cricket clothing and equipment completed via the Platform for Accelerating Sustainability in Cricket (PASIC).
- Consider emerging regulations and policy developments in the EU and UK that may influence future product design, waste management and producer responsibility within the fashion and sporting sectors.
- Explore the environmental impacts associated with cricket gear and clothing production, use and disposal.
- Encourage students to think critically about repair, refurbishment, repurposing and circular business models.
- Provide insights into product innovation methodologies, including concept development and early prototyping.
- Support collaborative learning through practical innovation exercises using the GreenThink! methodology.

The workshop design and planning also drew on *The Great British Sewing Bee* as a source of inspiration and background context for the upcycling workshop. In the programme's Sports Week challenge, contestants were tasked with transforming traditional white cricket clothing into innovative fashion garments. This creative exercise aimed to demonstrate how existing materials, including cricket shirts, trousers and knitwear could be reimagined and repurposed into entirely new designs.[4] The challenge highlighted the potential of upcycling to extend the life of garments while encouraging creativity and experimentation.

[3] Assumptions include participation rates, average spending, and European market data. European market data is available at: *Europe Cricket Apparel & Equipment Market Size & Outlook.* Available at: https://www.grandviewresearch.com/horizon/outlook/cricket-apparel-equipment-market/europe; The average price range for cricket clothing is the following: Shirts: £15 to £25; Trousers: £17 to £22 and Jumpers: £40 to £60.
[4] https://thefoldline.com/blogs/great-british-sewing-bee/great-british-sewing-bee-2024-sewing-patterns-s10-ep2

Image 1: Screenshot from The Great British Sewing Bee's Cricket Whites and Gear Facebook post

3. GreenThink! Collaborative Innovation Workshop

Firstly, the workshop introduced students to practical and research-led approaches to sustainable innovation for cricket clothing. This included an overview of past and present real-world projects completed as part of PASIC and highlighted issues related to cricket clothing issues and regulatory developments. This was followed by the introduction to six design briefs (**see Annex I** for full briefs). Students were grouped into each brief/group with 3 to 5 students per group to explore the following circular design challenges and opportunities in relation to cricket shirts and trousers:

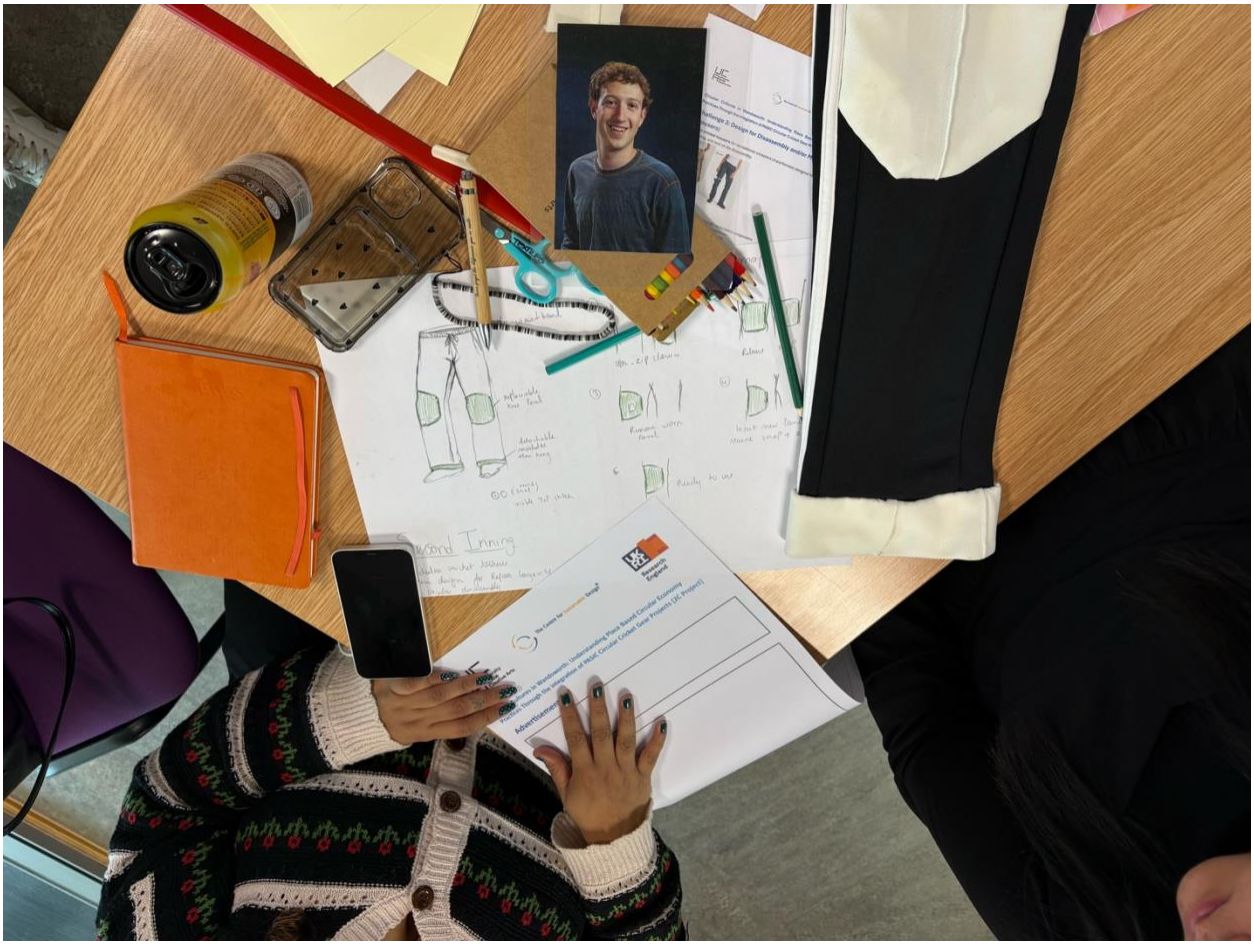
- Repair Kits and Repurposing
- Design for Disassembly – Shirts
- Design for Disassembly – Trousers
- Upcycling for Fashion and Accessories
- Upcycling for Furnishings
- Circular Business Models

This was followed by the delivery of the GreenThink!©innovation process focused on ideation and concept development that included a collaborative hands-on early prototyping session and presentation.

The innovation/concept development session was structured around the GreenThink!© methodology (see Image 1) that was trialed and tested with over 36 eco-innovative SMEs in 2011 and then has been used in various other workshops including #Net_HackChallenge[5] that focused on developing products concepts from waste fishing gear.

The GreenThink! © process uses a mix of presentations, group and individual exercises incorporating a range of techniques to help stimulate creative thinking amongst participants. Each group developed initial concepts and practical responses to the six briefs, considering environmental, functional and commercial factors. This was followed by a hands-on prototype development.

Image 2: Green Think Methodology in Action



4. Hands-On Prototype Development Session

The GreenThink! © activities were organised over approximately 45 minutes and enabled students to generate ideas before developing and refining their concepts. The student's ideas and concepts were then structured and documented on pre-designed forms. These concepts, along with the thinking processes

[5] https://cfsd.org.uk/projects/circular-ocean/nhc/

behind them, were then carried forward by the students into the making phase where 1-2 pairs of trousers and 1-2 shirts were distributed to each of the six groups to use as materials to address the respective briefs (See Image 2 for examples of the cricket shirts and trousers used).

Image 3: Cricket Shirt and Trousers Sample

The participants then engaged in a practical making/prototype development session over 60 minutes. This interactive workshop encouraged experimentation, collaboration and rapid prototyping. For this session, students formed six multidisciplinary teams focused on each of the briefs that included a mix of fashion/creatives and business backgrounds.

Activities included:

- Hands-on making and material exploration (using unwanted cricket clothing and basic sewing skills)

The students developed the following concepts in response to the 6 briefs presented within the GreenThink! © process:

4.1 Concept 1: Repair Kits and Repurposing

The repair kit concept development explored the upcycling of discarded cricket clothing to create a prototype “case/pouch” containing the materials and tools required for players to undertake self-repair of their cricket gear and clothing. Students were provided with a range of example repair items, including a travel sewing kit, thread, scissors, linseed oil, sandpaper, replacement rubber bat handles and leather patches, to demonstrate the types of components the repair kit would need to accommodate.

Using donated cricket shirts and trousers, the prototype reconfigured garment panels, fastenings and fabric details into a functional roll-out repair kit with separate compartments for tools and materials. The concept demonstrated how end-of-life cricket apparel could be repurposed into products that support repair and product lifetime extension strategies both through the reuse of end-of-life materials and care/maintenance of existing products.

4.2 Concept 2: Design for Disassembly – Shirts

The design for disassembly concept explored how cricket shirts could be redesigned to support easier repair, refurbishment and material recovery at end-of-life. Students examined how garment construction, fastenings and component selection could enable products to be more easily taken apart, repaired or repurposed, rather than discarded when damaged or no longer required due to changing club colours or sponsorship.

Using donated cricket shirts as a starting point, the prototype introduced modular and detachable design elements that would allow sections of the garment to be separated and replaced independently. Detachable components included the collar section and underarm section which are prone to increased wear and tear due to sweat stains and friction, resulting in early end-of-life disposal while the rest of the shirt remains in good condition. The concept considered removable panels and simplified construction methods could support garment longevity, reuse of materials and more efficient recycling processes. The concept demonstrated how design for disassembly principles could help reduce textile waste in cricket clothing by enabling products to remain in circulation for longer through repair and component replacement.

4.3 Concept 3: Design for Disassembly – Trousers

The design for disassembly concept for cricket trousers explored mechanisms for ease of repair, refurbishment and material recovery at end-of-life. Students examined the construction of the trousers and identified areas of increased wear and tear, specifically, the knee area.

Using donated cricket trousers as a starting point, the prototype introduced modular and detachable knee pads that would allow worn sections of the garment to be replaced independently without disposing of the entire product. The concept explored how removable knee pads could support product longevity, material reuse and more efficient recycling processes, as well as the customization of the knee pads.

The prototype demonstrated how design for disassembly principles could help reduce textile waste in cricket clothing by extending garment lifetimes through targeted repair, component replacement and refurbishment, while retaining most of the original product in active use.

4.4 Concept 4: Upcycling for Fashion and Accessories

The upcycling for fashion and accessories concept development explored how end-of-life cricket clothing could be transformed into higher-value fashion products and wearable accessories. Students examined the aesthetic, functional and material qualities of donated cricket garments and identified opportunities to repurpose surplus clothing into contemporary fashion items rather than disposing of them as waste. The concept development resulted in a fashion statement piece with an integrated charging cable. Using donated cricket shirts as source materials, the prototypes incorporated detachable elements and reused fabric components to create unique fashion-led outcomes.

4.5 Concept 5: Upcycling for Soft Furnishings

The upcycling for soft furnishings concept explored the transformation of discarded cricket clothing into functional home and interior products, focusing on extending material life beyond its original use. The students examined the structure of a cricket shirt, considering fabric properties, printed graphics, seams and construction techniques, and identified how these elements could be reinterpreted for use in soft furnishings. Particular attention was given to how existing visual identities and branding on garments could be retained while shifting their function.

Using a donated cricket shirt as a starting point, the prototype reconfigured the garment into a soft furnishing product such as a cushion. The original cricket shirt layout was deconstructed and reassembled into flat pattern pieces, allowing the front graphic and lettering to remain visible as a design feature.

The prototype demonstrated how upcycling principles can be applied to furnishings to reduce textile waste by diverting clothing from landfill and reimagining it as second life interior products.

4.6 Concept 6: Circular Business Models (CBM)

Building on insights generated through the use of the Business Model Canvas (BMC)[6] during the GreenThink!© process, the concept centred on the development of a flexible garment identity that could evolve over time rather than complete replacement of the kit. However, the result appears to have shifted from using BMC as a framework for developing a full business model to using it primarily as a tool to inform and refine a product concept.

The concept developed explored a customisation product concept that would enable players to adapt their cricket clothing in response to changing sponsorship requirements through interchangeable logos and branding systems. The prototype reconfigured the garment to incorporate removable or swappable branding components, such as panel-based or velcro-backed logos.

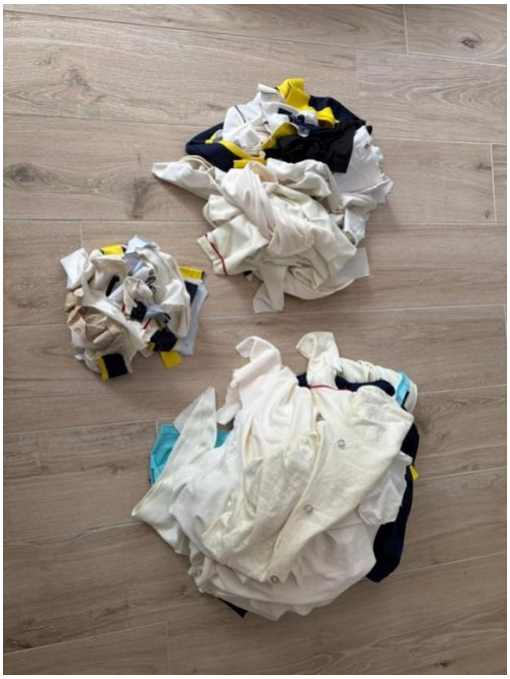
4.7 Upcycling Off-cuts

As part of the six-concept prototype development process, a significant quantity of textile off-cuts was generated. Rather than being discarded, these materials were recovered and retained for use in future workshops and ongoing product development activities. The off-cuts have potential applications as structural components, internal padding, surface embellishments, and other functional or aesthetic features within subsequent prototypes.

This approach supports the project's broader circularity focus by reducing material waste, extending the lifecycle of donated garments, and encouraging a circular design methodology. The recovery and reuse of surplus materials additionally contributed to lowering the environmental impact of the workshop by minimising landfill waste and maximising the use of available resources.

[6] The **Business Model Canvas (BMC)** is a strategic, one-page template used to develop, map, and visualize a business model.

Image 3: Upcycling Off-cuts



5. Lessons Learnt

- The workshop provided students with an understanding of the environmental challenges faced by the cricket gear and clothing industry. Through collaborative activities and practical exercises, students gained insight into:

    - Circular design and systems thinking
    - Repair, refurbishment and repurposing strategies
    - Sustainable product innovation methodologies
    - Circular business model development
    - The relationship between sustainability, marketing and consumer behaviour

- The importance of interdisciplinary collaboration for sustainable innovation and its integration into product development and communication practices was highlighted.
- Despite not all students having a fashion or clothing background or advanced sewing skills, the early-stage prototypes produced were of good standard and the process helped them understand how to transform ideas into concepts into tangible objects.
- The workshop also revealed an initial reluctance to alter cricket clothing (trousers and shirts) during the upcycling activities, as students perceived the garments to be in pristine condition (although they were all 2nd life clothing). Only after it was explained that the clothing had been donated and diverted from landfill did participants feel comfortable cutting and modifying the shirts and trousers and engaging fully in the activity.
- From an upcycling perspective, the coloured and personalised garments, along with variations in club identities and sponsor branding, offered greater creative opportunities for upcycling than

traditional white shirts and trousers, enabling a wider range of distinctive and innovative outcomes.

- Feedback from the course lecturers indicated that the workshops had enabled the MA students to bring together creative skills, business knowledge and marketing strategy. As course lecturer, Dr Katie Rees pointed out, the workshop was "an amazing opportunity to develop the learning from the curriculum into a hands-on session, inspired by the real-life research and industry from The Centre for Sustainable Design".
- Students were asked to provide feedback on the workshop via one keyword. Keywords included: creativity, enjoyment, challenging and overthinking

Learnings from CfSD team highlighted the following reflections:

What worked well:

- The mix of presentations and practical activities helped connect circular economy concepts to real-world applications.
- Handling real cricket clothing made a big difference - once students could inspect the products, ideas flowed much more naturally
- The practical activities were key in helping students connect the circular economy concepts discussed in the presentations to real-world solutions. The different prompts and materials (e.g. magazines, visual references and examples) helped spark ideas
- Going around and checking in with students helped maintain focus and engagement, moving past initial uncertainty
- Students were able to develop and communicate basic prototype concepts despite the relatively short timeframe
- The mix of design and business/marketing students worked well, as people naturally fell into the roles that suited them best - for example, students with design backgrounds quickly took the lead on stitching while others worked on the marketing pitch

Areas for improvement:

- Improved clarity regarding tasks: some students initially overthought the task or found parts of the challenge slightly confusing.
- Indicate collaboration requirements prior to workshop: as some students were hesitant to collaborate across the different MA programmes

6. Post-Workshop Evaluation in the Context of Embedding Sustainability Frameworks in Higher Education Curricula

The workshop design focused on the objectives related to circular design as highlighted in Section 2 with no specific alignment to the United Nations Sustainable Development Goals (SDGs) and the Design Council's Skills for Planet Blueprint (SPB). Given the increasing importance sustainability in the curriculum, a post-hoc review was undertaken to assess alignment and identify gaps related to the SDGs and SPB. The analytical review was supported by the paid for version of Chat-GPT, an Artificial Intelligence advanced

process language machine learning software. The tool was employed to assist in identifying patterns across the workshop report to explore potential links to circular economy principles and sustainability frameworks within the UN's SDG's and the DC's SPB.[7]

This analysis highlights the importance of intentionally mapping relevant SDGs and SPBs into the planning and design of different elements of the curriculum—such as teaching activities and project work—since individual interventions are unlikely to address the full range of SDGs and/or targets or the complete spectrum of SPBs in isolation. To consider the issues in more detail structured review of the workshop report using a four-point scale (Strong, Medium, Weak/Indirect, Gap) across both frameworks (SDG's and the SPB's) was undertaken. A summary is highlighted below, while full details of the analysis is provided in ANNEX II.

The Cricket Clothing Upcycling Workshop aligns strongly with SDG 12 (Responsible Consumption and Production), SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals), with additional partial or indirect contributions to SDG 8, SDG 11, and SDG 15 through reduced reliance on virgin synthetic materials and waste reduction. The strongest alignment relates to circular economy education and practice, including upcycling, repair, modular design, and design for disassembly, alongside collaborative innovation and early-stage circular business thinking. However, areas such as biodiversity impact, equity considerations, emissions quantification, and formal impact evaluation remain underdeveloped (as they were outside of the workshop design).

In relation to the DC SPB's, the workshop demonstrates strength in embedding circularity, encouraging greener behaviours, and developing foundational design skills such as problem framing, co-creation, critical thinking, and problem solving. The workshop effectively supports learning at the awareness and development stages of sustainable design capability. But the workshop was less advanced in areas such as regenerating nature, eliminating emissions, empowering green communities, and evaluating environmental impact due to the absence of quantified baselines, carbon and waste metrics, biodiversity assessment, and longitudinal impact data which were outside of the workshop design.

A key learning emerging from the analysis is the recognition that individual workshops—and indeed individual modules or curricula—cannot realistically address the full breadth of sustainability challenges, Sustainable Development Goals (SDGs), and green skills required for contemporary practice. Rather than attempting comprehensive coverage within singular learning activities, there is value in strategically identifying and embedding preselected SDGs and sustainability competencies that are most relevant to specific teaching and learning contexts. This suggests the need for a layered pedagogical approach, whereby students are first introduced to the broader concepts of sustainability, the SDGs, and green skills

[7] Disclosure of AI use for analytical review: The output generated by the tool was subject to review, verification, and critical evaluation by the authors. It reflects an emerging approach within research and higher education, whereby AI can function as a support tool capable of facilitating idea exploration, thematic synthesis, and knowledge organisation. When applied transparently and with appropriate human oversight, such tools can enhance analytical efficiency and support deeper engagement with complex datasets and conceptual frameworks. In context, AI-assisted analysis served as one component of a broader reflective process grounded in the author's subject expertise, contextual understanding, and academic judgement.

as cross-cutting themes that underpin their educational experience. More targeted exploration can then be undertaken through specialised workshops, projects, and disciplinary activities that allow students to engage with specific sustainability challenges in greater depth. Such an approach may offer a more coherent and effective means of developing sustainability literacy while ensuring meaningful alignment between learning outcomes, pedagogical activities, and sector-specific sustainability priorities.

7. Conclusion

The Cricket Clothing and Gear Repair and Refurbishment Workshop successfully combined research, creative thinking, group discussion and practical experimentation related to transforming circular economy principles related to developing solutions from waste cricket clothing. By drawing on real-world projects and encouraging hands-on innovation, the workshop provided participants with valuable insight into circular design challenges and opportunities relevant to fashion, marketing and product development. Furthermore, the soft furnishing and repair kit prototypes developed during the workshop received positive feedback from stakeholders at the launch event of CCG Hub held on 18th May 2026 at Spencer Cricket Club and demonstrated potential for further refinement and development within the wider 2C project. Although focused on cricket clothing, the workshop format could be applied to clothing and gear waste challenges related to other sports.

The workshop also highlighted the value of interdisciplinary collaboration in addressing sustainability challenges. Bringing together students from fashion business, luxury management and marketing backgrounds, enabled a broad range of perspectives to inform the ideation process, encouraging participants to consider environmental, commercial and consumer-facing dimensions of circular innovation simultaneously. The collaborative format fostered creative problem-solving and demonstrated how sustainability challenges in sport and fashion require integrated approaches across business strategy, design and communication.

The hands-on upcycling and prototyping exercises also demonstrated the importance of experiential learning in communicating circular economy principles. Engaging directly with end-of-life cricket garments enabled participants to better understand material value, product longevity and the challenges associated with changing consumer perceptions around second-life products. Initial reluctance to alter garments perceived to be in pristine condition further illustrated the tensions between perceived value, waste and disposal practices within sportswear culture.

The outcomes of the workshop provide valuable insights for the ongoing 2C project, ranging from stakeholder perceptions of end-of-life cricket clothing and its potential for upcycling, to informing the continued development of workshop methods and design approaches within sustainability-led design processes.

ANNEX I: Design Briefs

Challenge 1: Repair Kit

Using end-of-life cricket clothing, develop a **repair kit** bag with logo for recreational cricket players (male/female) to hold all necessary components[8] and instructions to extend the life of cricket clothing and gear through repair and encourage users to maintain/repair their gear rather than replace it.

Key Considerations:

- Portability and affordability
- Clear instructions om how to repair cricket gear and clothing (visual/manual/digital)
- Compatibility with common cricket fabrics (polyester blends, cotton)

Expected Outputs:

- Kit concept (contents, packaging, instructions)
- User journey (before/after repair)
- Enable players to self-repair cricket gear and apparel
- Promote repurposing of cricket clothing into secondary uses
- Reduce cricket gear and clothing waste and increase product lifespan

[8] Scissors, needles, thimbles, thread, needles, Velcro straps, batting grip, batting tape, linseed oil, boot studs

Challenge 2: Design for Disassembly and Modularity (Shirts)

Design a **cricket shirt** for recreational cricketers (male/female) for easy repair, upgrading, and end-of-life disassembly.

Objectives:

- Enable separation of materials without damage
- Facilitate repair and component replacement
- Improve recyclability of textiles

Key Considerations:

- Modular construction (e.g., detachable sleeves, collars, logos)
- Use of mono-materials or compatible materials
- Non-permanent joining techniques (e.g., stitching vs adhesives)
- Durability vs disassembly trade-offs

Expected Outputs:

- Garment design concept (early prototypes, sketches or diagrams)
- Disassembly process map
- Rationale for design concept

Challenge 3: Design for Disassembly and/or Modularity (Trousers)

Create **cricket trousers** for recreational cricketers (male/female) designed for easy repair, upgrading, and end-of-life disassembly.

Objectives:

- Extend garment life through replaceable components
- Enable efficient recycling of materials
- Reduce waste from high-wear areas

Key Considerations:

- Modular construction (e.g., replaceable knee patches)
- Use of mono-materials or compatible materials
- Non-permanent joining techniques (e.g., stitching vs adhesives)
- Durability vs disassembly trade-offs

Expected Outputs:

- Garment design concept (early prototypes, sketches or diagrams)
- Disassembly process map
- Rationale for design concept

Challenge 4: Upcycling (Fashion/accessories)

Transform end-of-life cricket clothing into **fashion accessories**.

Objectives:

- Create desirable, marketable products
- Reduce textile waste through upcycling

Key Considerations:

- Aesthetic appeal and storytelling
- Scalability vs one-off design
- Material durability and cleaning
- Branding and identity

Expected Outputs:

- Product concept (e.g., bags, jewelry)
- Design sketches or mockups
- Value proposition (why consumers would buy it)

Challenge 5: Upcycling (Furnishings)

Repurpose cricket clothing into **furnishings (e.g., home or pet furnishings)**

Objectives:

- Create functional and durable furnishing products
- Maximise material reuse
- Demonstrate alternative circular applications

Key Considerations:

- Durability and safety standards
- Ease of cleaning and maintenance
- Aesthetics
- Efficient use of material (minimising waste in production)

Expected Outputs:

- Furnishing concept (e.g., cushions, upholstery, wall panels)
- Material sourcing and transformation process
- Circular benefits explanation
- Value proposition (why consumers would buy it)

Challenge 6: Circular Business Models (CBM)

Develop a CBM that provides cricket clothing repair, recycling and upcycling services for recreational players (male/females) and B2B markets. Note: fibres from clothing can be potentially used in various product applications.

Objectives:

- Create a desirable, marketable CBM for cricket clothing
- Reduce textile waste through repair and recycling.

Key Considerations:

- Aesthetic appeal and storytelling
- CBM Scalability
- Map service journey
- Branding and identity

Expected Outputs:

- Service concept
- User journey
- Value proposition (why consumers adopt/use the service)

ANNEX II: Assessment of Alignment with the UN Sustainable Development Goals and Design Council Skills for Planet Blueprint

1. Executive Summary

Overall, the Cricket Clothing Upcycling Workshop was designed to explore circular design aspects related to cricket clothing and produce upcycling concept. An objective review of the workshop's alignment to Sustainable Development Goals (SDGs) and Design Council Skills for Planet Blueprint (SPB) was completed using ChatGPT. The results of the post-event review are provided below. As indicated above the focus of the workshop was on circular economy related issues and therefore broader alignment to SDGs and SPBs were not part of the scope of the process design. However, the weaknesses are highlighted below to indicate the importance of clear planning of the alignment to specific SDGs and/or SPBs to ensure targeted learning outcomes are achieved.

The workshop demonstrates strong alignment with SDG 12 (Responsible Consumption and Production), SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals). It also shows partial alignment with SDG 8 (Decent Work and Economic Growth), SDG 11 (Sustainable Cities and Communities), and, to a lesser extent, SDG 15 (Life on Land) through indirect reduction of virgin synthetic material demand and waste. The strongest evidence lies in circular economy education, practical upcycling, repair, design for disassembly, modularity, and circular business model development. Alignment with biodiversity, equity, justice, emissions measurement, and formal impact evaluation is present but underdeveloped.

Against the Design Council Skills for Planet Blueprint, the workshop is particularly strong on Embedding Circularity, Influencing Green Behaviour, and the Foundational Design Skills of problem framing, critical thinking, co-creation, and problem solving. It provides a strong applied learning environment for the Awareness and Development tiers of green design skills. It is less developed in Regenerating Nature, Eliminating Emissions, Empowering Green Communities, and Evaluating Green Impact, mainly because the report does not yet include quantified environmental baselines, carbon or waste metrics, biodiversity considerations, equity analysis, or follow-up evidence on adoption and impact.

Framework area	Overall alignment	Rationale
SDGs overall	Strong / medium	Strong where the report addresses circular economy learning, waste reduction, repair, reuse, upcycling and innovation. Medium where broader social, community, climate and biodiversity outcomes are implied but not measured.
SDG targets	Strong for selected targets	Best alignment is with targets 4.4, 4.7, 8.4, 9.4, 12.2, 12.5, 12.8, 13.3, 17.16 and 17.17.
Skills for Planet	Strong / medium	Strongest alignment is with Embedding Circularity and Influencing Green Behaviour. The workshop also supports circular business model thinking and applied sustainability education.
Evidence quality	Medium	The report provides clear qualitative evidence of activities and prototype outcomes, but limited quantified evidence of environmental savings, learning gains, adoption, or long-term impact.

2. Scope and assessment method

This assessment reviews the workshop report against two frameworks: (a) the UN Sustainable Development Goals and their relevant targets, and (b) the Design Council Skills for Planet Blueprint. The assessment uses a four-point rating: Strong, Medium, and Out of Scope. The rating reflects the content of the report, rather than the potential of the work in future.

Evidence in the workshop report includes: a problem statement on synthetic cricket clothing and waste; a GreenThink! © collaborative innovation workshop with 24 UCA students; six circular design briefs; hands-on prototyping using unwanted cricket clothing; concepts for repair kits, design for disassembly, upcycling into fashion/accessories and furnishings, circular business models, and reuse of off-cuts; and lessons learned on collaboration, consumer perception and experiential learning.

3. SDG alignment overview

SDG	Alignment	Main basis for alignment	Key gap / improvement opportunity
SDG 4: Quality Education	Strong	Workshop-based learning; links to MA/MSc modules; practical learning in circular design, repair, prototyping, business models and consumer behaviour.	Add learning outcomes, assessment criteria, skills rubrics and evidence of student learning gains.
SDG 8: Decent Work and Economic Growth	Medium	Circular business model concepts, marketable upcycling products, repair services and potential new value streams.	Add analysis of decent work, enterprise viability, skills-to-jobs pathways and inclusive economic benefits.
SDG 9: Industry, Innovation and Infrastructure	Strong / Medium	Prototype development, circular product innovation, design for disassembly and business model innovation for sportswear.	Develop prototypes into tested pilots with manufacturers, clubs, repairers and apparel suppliers.
SDG 11: Sustainable Cities and Communities	Weak / Medium	Potential community-level application through cricket clubs, repair culture and local reuse systems.	Make club/community implementation explicit; include local collection, repair events and community stewardship.
SDG 12: Responsible Consumption and Production	Very strong	Core alignment: waste prevention, repair, refurbishment, reuse, upcycling, design for disassembly, off-cut recovery and circular business models.	Quantify material flows, waste avoided, replacement avoided and product lifetime extension.
SDG 13: Climate Action	Medium	Addresses fossil-fuel-based synthetic textiles and product replacement; education on environmental impacts.	Add carbon baseline, lifecycle assessment, emissions factors, and estimated carbon savings.
SDG 15: Life on Land	Out of Scope	Reduced virgin synthetic demand and waste may reduce pollution and resource pressure.	Add explicit biodiversity, microplastic, land/water/ecosystem impact considerations.
SDG 17: Partnerships for the Goals	Strong / Medium	UCA, CfSD, AHRC/UKRI, PASIC/2C context, course collaboration and stakeholder engagement.	Map partners, roles and future implementation pathways more explicitly.

4. SDG target-level alignment

Target	Target theme	Alignment	Evidence from report	Recommended strengthening
4.4	Increase the number of youth and adults with relevant technical and vocational skills for employment, decent jobs and entrepreneurship.	Strong	Students developed circular design, prototyping, marketing and business model skills through applied workshop activity.	Introduce a pre/post self-assessment of circular design skills and enterprise confidence.
4.7	Ensure learners acquire knowledge and skills needed to promote sustainable development.	Strong	The workshop explicitly introduced circular economy, sustainable product design, environmental impacts and product innovation methodologies.	Map workshop learning outcomes directly to sustainability competences.
8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation.	Medium	Circular concepts create potential higher-value applications from waste cricket clothing.	Progress concepts into market testing or enterprise pilots.
8.4	Improve resource efficiency in consumption and production and endeavour to decouple growth from environmental degradation.	Strong / Medium	Repair, reuse, upcycling and product-life extension directly support resource efficiency.	Quantify avoided new garments and avoided waste.
9.4	Upgrade industries to make them sustainable with increased resource-use efficiency and cleaner technologies/processes.	Strong / Medium	Design for disassembly and modular repair concepts provide routes for more sustainable sports apparel.	Engage suppliers/manufacturers to test production feasibility.
9.5	Enhance scientific research and upgrade technological capabilities of industrial sectors.	Medium	Builds on UKRI-funded research and tests innovation methodology in sport apparel.	Strengthen research design, data capture and publication of results.
11.6	Reduce the adverse per capita environmental impact of cities, including waste management.	Out of Scope	Potential to reduce local waste through club-level repair/upcycling systems.	Add local collection and community waste management model.
12.2	Achieve sustainable management and efficient use of natural resources.	Strong	Extends use of existing garments and off-cuts, reducing demand for virgin polyester and other inputs.	Measure quantities of garments/off-cuts retained in use.
12.5	Substantially reduce waste generation through prevention, reduction, recycling and reuse.	Very strong	Central focus: repair, refurbishment, reuse, upcycling, design for disassembly and off-cut recovery.	Create a waste hierarchy-based impact table for each concept.
12.6	Encourage companies to adopt sustainable practices and integrate sustainability information into reporting.	Medium	Circular business models and product innovation could support sportswear suppliers and clubs.	Develop supplier-facing reporting metrics and guidance.
12.8	Ensure people have relevant information and awareness for sustainable development and lifestyles in harmony with nature.	Strong	Experiential learning shifted perceptions of second-life clothing and highlighted repair/upcycling behaviour.	Track behaviour intentions and later behavioural changes.

13.3	Improve education, awareness-raising and capacity on climate change mitigation, adaptation and impact reduction.	Medium	The workshop raised awareness of environmental impacts from fossil-fuel-based synthetic textiles and circular alternatives.	Add explicit climate mitigation content, carbon accounting and adaptation/future climate scenarios.
17.16	Enhance global partnerships for sustainable development.	Medium	University, research-funding and platform/stakeholder contexts support partnership approaches.	Clarify shared objectives, governance and stakeholder contributions.
17.17	Encourage effective public, public-private and civil society partnerships.	Strong / Medium	Workshop connects higher education, research, sport sustainability and potential club/industry stakeholders.	Develop a formal partnership model for implementation at club and supplier level.

5. Design Council Skills for Planet alignment

The Design Council Blueprint defines a Green Design Mindset, four Foundational Design Skills (problem framing, critical thinking, co-creation and problem solving), and six Green Design Skill Areas containing 18 skills: Regenerating Nature, Embedding Circularity, Eliminating Emissions, Empowering Green Communities, Influencing Green Behaviour and Evaluating Green Impact. The workshop strongly supports the Green Design Mindset by asking students to move from a linear, product-disposal view of sportswear to a systemic circular design view that considers materials, users, clubs, business models and communication.

Blueprint area	Alignment	Evidence from workshop	Gaps / opportunities
Green Design Mindset	Strong	Systems view of cricket clothing waste; reframing pristine second-life clothing as valuable material; linking product, consumer and business dimensions.	Make planetary and more-than-human value more explicit, including microplastics, ecosystems and climate.
Foundational skills: problem framing, critical thinking, co-creation, problem solving	Strong	GreenThink! process, six briefs, interdisciplinary teams, rapid ideation, prototyping and presentation.	Capture evidence of individual competence development and reflection.
Regenerating Nature: skills 1-3	Out of Scope	Some indirect benefit through reduced synthetic textile demand and waste.	Add nature-focused strategy, biodiversity impact thinking, microplastic reduction, and representation of nature in decision-making.
Embedding Circularity: skills 4-6	Very strong	Repair kits, design for disassembly, modular components, reuse, upcycling, off-cut recovery and circular business model concept.	Add material specifications, scalability testing, circular procurement and end-of-life logistics.
Eliminating Emissions: skills 7-9	Out of Scope	Reduced replacement and extended product life imply emissions reduction.	Add decarbonisation strategy, emissions data, lifecycle carbon assessment and future climate scenarios.
Empowering Green Communities: skills 10-12	Medium	Potential club/player engagement; interdisciplinary collaboration; awareness of consumer perceptions.	Gather club/player/community insight, include equity and justice considerations, and design stewardship models.
Influencing Green Behaviour: skills 13-15	Strong	Repair kit instructions, user journeys, communication strategies, value proposition and storytelling around upcycled products.	Test messaging with players, parents, clubs and suppliers; track adoption.

Evaluating Green Impact: skills 16-18	Out of Scope	Qualitative lessons learned and feedback keywords provide early evaluation.	Set measurable goals, review benefits/risks and iterate based on evidence with defined KPIs.

6. Mapping to the 18 Skills for Planet skills

Skill	Current alignment	Evidence	Recommended next step
1. Implementing nature-focused strategy	Out of Scope	No explicit nature strategy; environmental framing centres on waste and synthetic materials.	Add nature and ecosystem objectives, e.g. microplastic leakage and biodiversity risk.
2. Representing nature in decision-making	Out of Scope	Nature is not represented as a stakeholder in design decisions.	Introduce prompts asking how concepts affect air, water, soils, species and ecosystems.
3. Collaborating with nature	Out of Scope	No nature-based or regenerative material exploration is included.	Explore bio-based, lower-impact or regenerative material options alongside reuse.
4. Implementing circular strategies	Very strong	Repair, reuse, upcycling, disassembly, modularity and off-cut recovery are central.	Develop circularity criteria for each prototype.
5. Adopting a circular business model	Strong	Dedicated CBM challenge proposes repair, recycling and upcycling services plus swappable branding.	Build service blueprint, revenue model, reverse logistics and stakeholder roles.
6. Selecting materials responsibly	Medium	Uses unwanted clothing and off-cuts responsibly; mentions polyester blends.	Add material compatibility, recyclability, durability and microfibre-shedding criteria.
7. Implementing decarbonisation strategy	Out of Scope	Product-life extension can reduce replacement emissions but is not framed as decarbonisation.	Add carbon reduction objectives and garment replacement scenarios.
8. Analysing emissions data	Out of Scope	No emissions data or LCA results are provided.	Estimate avoided emissions per garment, prototype and workshop.
9. Planning for future climate scenarios	Out of Scope	Emerging regulation is mentioned, but climate scenarios are not used.	Add future scenarios for heat, water scarcity, textile regulation and supply chain disruption.
10. Gathering community insight	Medium	Student feedback and stakeholder reactions are captured; player waste research is referenced.	Add direct insight from cricket clubs, players, parents, kit managers and suppliers.
11. Nurturing community stewardship	Medium	Repair and maintenance concepts could enable stewardship by players and clubs.	Create club repair ambassadors, repair days, and take-back/upcycling hubs.
12. Prioritising justice and equity	Out of Scope	Male/female recreational players are acknowledged, but equity is not analysed.	Consider affordability, access, gender, youth cricket, disability cricket and volunteer capacity.
13. Facilitating green choices	Strong	Repair kits, instructions, modular replacements and service concepts make lower-waste choices easier.	Prototype decision prompts and behaviour-change interventions.
14. Communicating business value	Strong	Marketing and value propositions are embedded, particularly in upcycling and CBM briefs.	Add clearer business cases for clubs, brands and suppliers.
15. Sharing success stories	Medium	Workshop prototypes and stakeholder feedback provide stories.	Create case studies, visual storytelling assets and dissemination plans.
16. Setting measurable goals	Out of Scope	Goals are implicit: reduce waste, extend life, improve circularity.	Set quantified goals for waste diverted, garments repaired,

			prototypes tested and learners trained.
17. Reviewing benefits and risks	Medium	Lessons learned identify practical and behavioural barriers.	Add structured risk-benefit review: hygiene, durability, safety, brand/IP, cost and rebound effects.
18. Iterating based on evidence	Medium	Lessons learned and prototype feedback can support iteration.	Plan follow-up prototype revisions and field trials with defined evidence requirements.

7. Concept-by-concept alignment

Workshop concept	SDG contribution	Skills for Planet contribution	Assessment
Repair kits and repurposing	SDG 4.7, 8.4, 12.5, 12.8, 13.3	Circular strategies; facilitating green choices; community stewardship; communicating value.	High-value concept because it changes user behaviour and extends the life of existing cricket gear.
Design for disassembly: shirts	SDG 9.4, 12.2, 12.5, 13.3	Circular strategies; selecting materials responsibly; benefits/risks; iterative design.	Strong product design alignment; needs durability and recyclability testing.
Design for disassembly: trousers	SDG 9.4, 12.2, 12.5	Circular strategies; modularity; responsible materials; green impact evaluation.	Strong because it targets high-wear areas and avoids whole-garment disposal.
Upcycling for fashion/accessories	SDG 8.2, 8.4, 12.5, 12.8	Facilitating green choices; communicating business value; sharing success stories.	Strong for consumer engagement and creative reuse; needs market, durability and cleaning tests.
Upcycling for furnishings	SDG 8.2, 12.5, 12.8	Circular strategies; responsible materials; communicating value.	Strong demonstration of second-life applications beyond sport; needs safety, cleaning and performance criteria.
Circular business models	SDG 8.2, 8.4, 9.4, 12.6, 12.5, 17.17	Adopting a circular business model; facilitating green choices; community stewardship; business value.	Potentially the most scalable route if linked to collection, repair, resale and supplier partnerships.
Off-cut recovery	SDG 12.2, 12.5	Circular strategies; evaluating green impact.	Good practice within the workshop; needs quantification and reuse plan.

8. Key strengths

- Clear circular economy focus: the workshop moves beyond awareness into making, repair, modularity, upcycling and service concepts.
- Applied pedagogy: students learned by handling real end-of-life garments, which strengthened understanding of material value and waste.
- Interdisciplinary innovation: the mix of design, fashion, business and marketing perspectives reflects the cross-functional nature of circular transition.
- Behaviour-change relevance: repair kits, instructions, storytelling and value propositions make lower-impact choices more practical and desirable.
- Scalability potential: concepts could be adapted to other sports apparel waste streams and developed into club, supplier or community pilots.

9. Areas for potential future workshop development and research

Recommendation	Action	Framework benefit
1. Add quantified impact metrics	Record number and weight of garments used, off-cuts generated/recovered, estimated waste diverted, avoided replacement garments and estimated carbon savings.	Improves SDG 12, SDG 13 and Skills 16-18.
2. Strengthen emissions evidence	Add a simple lifecycle/carbon baseline for typical polyester cricket shirts/trousers and compare repair/upcycling options.	Improves SDG 13 and Skills 7-9.
3. Add nature and microplastic lens	Assess synthetic fibre shedding, pollution pathways, material toxicity and biodiversity relevance.	Improves SDG 15 and Skills 1-3.
4. Include community and equity insight	Run short interviews with players, parents, club kit managers, women/girls teams, youth teams, disability cricket groups, suppliers and repairers.	Improves SDG 10/11/17 relevance and Skills 10-12.
5. Develop implementation pathway	Create a pilot model for clubs: collection, sorting, repair/upcycling, resale/donation, sponsor logo updates, and reporting.	Improves SDGs 8, 9, 12 and 17.
6. Evaluate learning outcomes	Use pre/post surveys and reflective prompts mapped to circular design and Skills for Planet competencies.	Improves SDG 4 and evidence quality.
7. Test prototypes in context	Assess durability, usability, cleaning, user appeal, repairability, cost and safety.	Improves Skills 17-18 and supports market adoption.

10. Suggested indicators for future reporting

Indicator category	Example indicators
Learning and skills	Number of learners; pre/post confidence in circular design; Skills for Planet self-assessment scores; number of prototypes completed.
Material circularity	Number/weight of garments collected; percentage reused, repaired, upcycled or recycled; weight of off-cuts recovered; product lifetime extension.
Climate	Estimated avoided replacement garments; estimated avoided kg CO2e; emissions comparison between new, repaired and upcycled product pathways.
Behaviour change	Number of players/clubs using repair kits; repair frequency; willingness to buy/use upcycled products; attitude change towards second-life sportswear.
Community and equity	Number and diversity of clubs/players engaged; affordability of repair/upcycling services; inclusion of women/girls, youth and under-served groups.
Business model	Cost per repair/upcycled item; revenue potential; partner roles; collection and reverse logistics performance; customer adoption.

11. Conclusion

The report aligns strongly with the SDGs and the Skills for Planet Blueprint as an applied circular design and sustainability education intervention. Its core contribution is to translate circular economy principles into practical design and business concepts for a specific sportswear waste problem. The strongest SDG alignment is with SDG 12 and SDG 4, supported by meaningful links to SDGs 8, 9, 13 and 17. The strongest Skills for Planet alignment is with Embedding Circularity, Influencing Green Behaviour and the foundational design skills that underpin green design practice.

12. References

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