

Liverpool Knowledge Quarter Sustainability Network

Highlights report to 2018



Hello from the KQSN!

The KQSN was established in 2014 and has been meeting bi-annually as a vibrant group of local organisations dedicated to enhancing the life of workers, students, visitors and residents of the area. Members draw on of a vast range of sustainability knowledge and include representatives from higher and further education, healthcare, cultural organisations, local government, and grassroots parties. The network operates by raising the profile of sustainability and environmental issues throughout its membership, and by instilling a collaborative style of working, with subsidiary working groups forming to progress sustainability in areas such as food, waste resource, and travel.

The KQSN reports directly into the KQ Liverpool Board and hopes to use this commentary to engage more widely with our partners and stakeholders by featuring partnership and innovation that has been supported or promoted through the network, and introducing its objectives moving forward.

In delivering a strong community of best practice, the KQSN aims to propel the Knowledge Quarter into being a model of excellence for sustainability in the Liverpool City Region.

This report indicates a flavour of the collaboration and innovation taking place through, and encouraged by, the KQSN's members. Moving into 2019 and beyond, the KQSN aims to:

- Establish an online space where KQSN members and visitors can connect, and where an updated KQSN Terms of Reference can be viewed.
- Further embed SDG mapping in the KQ, working closely with the 2030hub.
- Produce green mapping of the Knowledge Quarter
- Encourage recognition of best practice, and share best practice nationally
- Explore future funding opportunities (grant initiatives)

May 2019

Sustainable Development Goals

The KQSN aims to work closely with its partners and the Liverpool 2030hub to progress work towards the 17 UN Sustainable Development Goals (SDGs) and to embed these within reporting across the Knowledge Quarter. You can view where the KQSN's work links to the SDGs throughout this report. *Press Ctrl and click the tiles below to view each SDG in detail.*





Energy

The KQSN contains considerable expertise in sustainable energy management. The University of Liverpool operates an award-winning heat network throughout its campus (also receiving an award at the 2017 Liverpool Echo Environment Awards for energy management), connected to which is a smaller heat network on the Royal Liverpool Hospital site too. A third network is planned for Paddington Village. The Royal Liverpool Hospital's CHP system has been upgraded, with a new installation at Liverpool Women's planned in 2018.

Where large-scale onsite generation is not feasible, the KQSN can offer examples of best practice: LJMU derives its electricity from 100% renewable energy, and maintains a small provision of solar PV at its Byrom Street campus. The KQ can showcase exemplary use of LED lighting, including at the National Oceanographic Centre and LED street lighting at Broadgreen Hospital.

In 2017 the Everyman Theatre won Sustainable Building of the Year shortly after its re-opening; an overview of the technology in the new theatre (rainwater harvesting, natural ventilation, LED, recycled materials, CHP) can be found here: <https://www.everymanplayhouse.com/a-greener-theatre>. Meanwhile the Royal Liverpool Philharmonic has recently enlisted the support of the Carbon Trust to procure solar panels for their grade II* listed building. In addition, the KQSN has supported awareness-raising and skills enhancement in energy management, with Liverpool Guild of Students (LGoS) having supported students to undertake energy audits of the University of Liverpool's campus.



Case Study: Low Carbon Eco-Innovatory

The Low Carbon Eco-Innovatory (LCEI) encourages research, innovation and knowledge transfer through offering businesses direct access to the leading research and development institutions of Liverpool John Moores University, University of Liverpool and Lancaster University including the new houses in partnership with BRE. This unique approach opens up facilities and expertise for companies to exploit, enabling SMEs in Liverpool City Region to seize a competitive advantage.

The LCEI works with SMEs in Liverpool City Region from a variety of sectors and industries. From aluminium smelting to biotechnology; from maker spaces to safari parks; together its staff and partners create innovative low carbon goods, processes and services. Its collaborative approach partners companies with leading university academics, researchers and students to make a real difference in their industry, in the region and across the world.

LCEI has assisted up to 200 local SMEs to help them focus on their specific challenges and identify opportunities for them to benefit from low carbon development and support. This collaborative research and development approach has brought about benefits in profitability and strategic decision-making for the businesses, and economic and environmental benefits for Liverpool City Region.

The universities have several years' experience in delivering this and similar programmes, bringing millions of pounds of benefit to the economy, increasing the effectiveness of businesses in a variety of sectors and reducing carbon emissions by thousands of tonnes.

Case Study: The Environmentalists

Both universities, Merseyside Recycling & Waste Authority and Merseytravel also worked with the award-winning Young Everyman & Playhouse (YEP) to develop their play, *The Environmentalist*, in 2016. Our partners provided guidance on carbon-offsetting, sustainable travel and carbon reduction. The play was the UK's first carbon-neutral show and had the largest YEP audience to date.

Pictured left: The Environmentalists



Life & Land

Some of our partners have successfully delivered projects adjacent to the Knowledge Quarter, enhancing green space across our part of the city. Richard Scott (formerly of the National Wildflower Centre) and Polly Moseley won funding jointly with Manchester to develop a Tale of 2 Cities project (<http://www.taleof2cities.org.uk/>) which created wildflower corridors along Islington, which marks the eastern edge of the Knowledge Quarter. They are now working on delivering the Northern Flowerhouse, with Richard currently being funded by the Eden Project. The KQSN has supported organised visits with Groundwork to Everton Park's growing space, which is located near to Liverpool Hope University's creative campus.

Both the University of Liverpool and Liverpool John Moores University have started to review their estates and the green spaces within them and the new Royal Liverpool Hospital includes a planned green heart, with access to attractive green space for patients, visitors and staff. City of Liverpool College have used their students to inform their garden plans at Cornwallis Street and some of their students have attended beekeeping courses at Blackburne House on Hope Street. Further beehives are nurtured at the LGoS's rooftop garden.



Case Study: LJM University Forest School

The Forest School area at IM Marsh campus was first established in July 2015. Under the guidance of Mersey Forest, a derelict site on campus was cleared to make way for a fire pit, seating area and a series of pathways around the woodland area. Since its inception, the area has been used with primary trainees on the QAPH primary programmes to deliver Forest School training so that they all leave the course with this valuable qualification. This is especially useful to trainees who gain employment in Liverpool schools where there is a high commitment to Forest School approaches. Data has been gathered from these trainees to show the impact the training has had on their self-efficacy, levels of resilience and own subject knowledge and pedagogies. This is building up leading-edge research into the impact of Forest School on primary trainees.

Beginning in the 2017/18 academic year, local primary schools were invited to bring groups of children to the area to be taught a range of Forest School activities. These sessions are led by qualified LJM staff and assisted by primary trainees to help refine their own FS teaching skills. Emerging themes are that the sessions are increasing the children's self-confidence and improving behaviour in the classroom. As a follow on to this research, we have been successful in our bid for an LJM PhD studentship that will focus on working with more cohorts of LJM primary trainees to ascertain the links between their levels of engagement with the programme and their own backgrounds and experiences of the outdoors. We have had the support of Mersey Forest in this project who will be acting as advisors on the project.

The development of a new Forest School site in the city centre – directly in the Liverpool Knowledge Quarter – is underway for when the School of Education moves to the Haigh Building in 2020. This project is driven through a collaboration with Mersey Forest and local schools to become a unique selling point for the primary programmes and increase opportunities for partnerships with city centre schools. The aim is to continue to train LJM primary trainees and work with the schools in the city centre who currently have limited access to green spaces for learning. The relocation offers an opportunity to use the space for wellbeing purposes, in conjunction with LJM's Student Advice and Wellbeing services, and also for other programme specific projects. We are also developing opportunities for collaborations with Alder Hey Forest and Hospital Schools and we have a new link with GROW- Wellbeing community interest group.

Pictured left: LJM University Forest School trainees

Case Study: Aquaponics

Aquaponics has become a thriving speciality in the Knowledge Quarter. After a debut installation at the Liverpool Guild of Students, new installations have been rolled out to the Life Sciences UTC (University Technical College) and at Alder Hey Children's Hospital. Further installations are anticipated at the City of Liverpool College, who are hoping to have them fitted into their kitchen areas.

Dave Wheatley of the Guild explains: "The Aquaponics installation is located on the roof of the Reilly Building. It was initially established following a successful bid to the Seed Fund in 2013-14 by a group of post graduates who have since established a successful social enterprise named Farm Urban. The site includes a number of fish tanks containing a range of carp species. The waste products from the fish are filtered and microbial activity converts toxic wastes such as ammonia into nitrates which are then taken up by plants rooted in the circulation water providing the necessary nutrients for growth.

In this way the installation demonstrates an alternative farming method which can be used to cultivate food crops and is particularly well suited to the urban environment where available land is at a premium. It therefore serves as a valuable educational resource. In doing so it also provides a rare opportunity for our student volunteers to gain an insight into this method of sustainable cultivation whilst gaining practical skills alongside other important skills such as teamwork. Access is secure and restricted to the staff, the Farm Urban team and participating volunteers."

Case Study: Reducing travel emissions

Electric vehicle charging points (ECVPs) are dotted throughout the quarter. KQSN members including the Philharmonic, Liverpool Women's Hospital, the Royal Liverpool Hospital and the Universities bid for grants from Merseytravel to install or upgrade ECVPs. More are planned for Paddington Village, too. During 2018, LJMU increased the proportion of low carbon vehicles in the University fleet.

City of Liverpool College have worked with Merseytravel to extend their support for rail passes and have successfully introduced a car share scheme.

Case Study: Aquaponics

Fred van Vuren (Bioveterinary Science and MBiolSci graduate and Intern of Farm Urban) and Laurence Anderson set up the Guild of Students Aquaponics Society Fred also doing an internship with the Guild.

Shaping futures – after the success of our first shaping futures project (2017-18) we bid for and won a further £30K project for 2018/19. The first project supported around 4500 pupils in gap wards. This second project will reach 6000 - Delivering a TEDx talk (as featured in Liverpool TEDx 2016) to Year 9, 10 and 11 pupils, across 10 schools on current food security issues. Groups of students selected by the schools then join the "Future Food Challenge" where teams compete in an inter-school enterprise competition. Creating their own eco-start-up focusing on aquaponics. At the end of the programme each team will themselves lead a hands-on, interactive workshop presented to their peers at their school, sharing what they have learned and inspiring their fellow pupils to participate in ongoing projects.

Pictured below: the aquaponics system on the LGoS rooftop garden



"This [aquaponic] model will improve our understanding of long-term nutrient utilisation and losses within aquaponic systems, as well as provide data on the system's fish and crop-carrying capacity and sizing of future large-scale frames."

PhD student with Farm Urban



Community

RLBUHT works closely with Liverpool Life Sciences University Technical College (UTC), located in the Baltic area of the city. Over 300 young people have attended the work exposure programme, which has been recognised by OFSTED, who noted that students are exceptionally well prepared for their future careers. In addition, a new placement programme allows students to complete the Care Certificate qualification, supporting them into paid part-time and seasonal healthcare assistant roles within the hospital. This excellent example of partnership demonstrates how schools and the public sector successfully promote careers in the NHS, and the initiative is currently being promoted and piloted in a number of hospital in the North West.

In 2017 LJMU commissioned a Social and Economic Impact report, which measured some of the University's work in the community. Headlines included one million hours of volunteering undertaken by LJMU staff and students each year. To view the report, including all its case studies and the economic impact of LJMU on the Liverpool City Region, [read the report here](#).

Partnership work within the KQSN has enabled students from both Liverpool John Moores University and the University of Liverpool to support community initiatives with research and monitoring. The Rose Voucher project has benefited from LJMU food and nutrition students writing case studies and assessing the impact of the project for their dissertations; and currently has a Psychology PhD student from UoL supporting staff at the Belle Vale children's centre as a volunteer for the project. An LJMU MSc-level student produced a report on access to food for the elderly and the health consequences of inadequate nutrition. This report was included within the All Party Parliamentary Group review on the issues facing the elderly nationally. It has further been a catalyst for a collaborative research project between the universities of Liverpool, Leeds and Newcastle called "Food to People, People to Food". This research has been shared with the Co-operative Food Policy Team.

Case Study: Micah Project

Micah is a joint project between Liverpool Cathedral and Liverpool Metropolitan Cathedral of Christ the King and St Bride's Church. In addition to providing a community shop and food banks at St Bride's and the Parish Church of St Vincent de Paul, it also incorporates an employability programme. The project arose from the desire of local churches to engage with their immediate neighbours and be a pillar of society.

The initial ten-week programme engaged with 225 people between December 2014 and December 2017. Of these, 187 completed the course and 107 entered employment. In 2018, approximately 40% who completed the course entered employment. The programme now runs for nine weeks and participants can choose roles in events, finance, retail, maintenance or the kitchens. Participants are offered support through four key pillars: the volunteering itself; 1-2-1 support with issues such as childcare or job applications; qualifications, including food hygiene and emergency first aid; and employer engagement.

Knowledge Quarter partners support the programme: The University of Liverpool guarantees to interview all job applicants who have completed the Micah Programme, who meet the essential criteria for the post; the Royal Liverpool Philharmonic works with Micah when applicable roles become available; and Liverpool Cathedral employs participants directly.

Pictured below: operations at the Micah foodbank





Food

KQSN collaboration has supported several smaller projects that are making a real difference in Liverpool. The City of Liverpool College has established a pop-up restaurant which makes use of surplus supermarket food. The Alexandra Rose Foundation was launched at Liverpool Women's hospital and was assisted by students from Liverpool John Moores University. The project is supporting families in Toxteth and Belle Vale to access fresh fruit and vegetables in partnership with the Children's Centres there. There are plans to expand this in 2019 into Anfield, Everton and the Dingle.

The Royal Liverpool hospital's catering contract was a national case study for Defra, due to the inclusion of the Government's Balanced Scorecard for public sector food procurement. The tender exercise was also shortlisted for a prestigious Procura+ European procurement award. Ian Stenton and Lucy Antal have continued membership of the Government's Food Procurement Implementation Taskforce and so are advantageously positioned to share best practice guidance and expertise to partners within the KQSN.

More recently, partners from the KQSN worked jointly on a six million euro funding bid to Urban Innovative Actions, to develop a circular food economy within the Knowledge Quarter. The application just missed out on being one of the 16 to receive funding – but made it into the top 30 from 206 bids overall. The bid process enabled business templates to be drawn up which can now be revisited if the correct opportunities present. This is an exceptional achievement and the KQSN is encouraged to continue working closely together in exploring further funding opportunities that may be available to support sustainable excellence in the Knowledge Quarter.

Case Study: Sustainable Food Cities Conference

It was through the work of Lucy Antal as the earlier Sustainable Food Cities Coordinator for Liverpool that the Knowledge Quarter hosted the 2016 Sustainable Food Cities Conference.

The Sustainable Food City Network has 44 member places across the UK which work on ways to improve food based sustainability, including: food waste; food access; food economy; food health; food growing; and food knowledge. The theme of the conference was The True Cost of Food and 180 representatives from 56 UK cities gathered to debate this issue. Delegates were welcomed to the conference by Councillor Jane Corbett, Cabinet Lead for Social Inclusion, Fairness & Equalities; and to the awards dinner by Merseyside Recycling & Waste Authority CEO Carl Beer. Delegates were encouraged to travel to the conference by public transport and all food for the event was sourced as locally and ethically as possible. Support through the network included:

- Merseyside Recycling & Waste Authority provided financial support to the conference and welcomed delegates.
- University of Liverpool hosted the conference at the Institute of Risk Management and provided accommodation within student halls of residence for delegates.
- The Student Guild provided the locally sourced catering for lunch and refreshments.
- Liverpool John Moores University students presented academic posters on research done into food poverty.
- The Pen Factory hosted the evening reception and awards dinner, serving Scouse to 120 people.



Waste and the Circular Economy

The KQSN currently operates two waste sub-groups. A general waste group has been working together to consider the most sustainable waste disposal methods for different organisational waste streams. There is plenty of existing collaboration, too. The two hospitals share their main waste contract and are currently zero-to-landfill. In addition, Liverpool Women's hospital has won two awards for their disposal of sharps waste.

In 2017 Bulky Bobs collaborated with LJMU on extensive office clearances, and is currently working with University of Liverpool to trial an innovative programme of refurbishing mattresses cleared from halls of residence. Claire Donovan from Bulky Bobs has attended KQSN meetings and participated in sub-working groups.

Liverpool Women's Hospital and University of Liverpool are currently preparing for new waste contracts. The University is undertaking a resource management plan for their new waste tender, which has involved all stakeholders. This is being mapped against the UN Sustainable Development Goals (SDGs), demonstrating a cohesive approach that is aligned with the work of Liverpool's 2030 Hub. The waste contracts will be let in tranches, so that local businesses can apply and they have been working with their catering department to phase out plastic bottles and replace with glass, in preparation and in response to increased focus on the damage of plastics waste.

"There are more than nine thousand children in Liverpool who don't have a mattress to sleep on. Working with the university will allow us to plan how best to refurbish their redundant mattresses for re-use. We are a registered charity and a social enterprise and we are in discussions with a number of KQSN members to commercially collect their unwanted mattresses. All mattresses that are suitable for reuse undergo our Six Step Ultraclean process to thoroughly sanitise them, and then they can be provided free-of-charge to families in need. The KQSN has been a great way for us to find like-minded partners to trial new ways of working."

Claire Donovan, Bulky Bobs

Case Study: Food Composting at LGoS

Following a major refurbishment, the Liverpool Guild of Students introduced a new waste scheme. It soon became evident that food waste from the production kitchens and contaminated food waste, including packaging, was a particular issue that elevated the overall proportion of waste going to general waste (and subsequent energy from waste incineration treatment).

Since there were numerous cultivation areas onsite, including a roof garden, LGoS decided to purchase a Rocket 700 Composter together with a food processor/de-watering plant at a total cost of around £30k funded through the National Union of Students under the Students' Green Fund programme. These were installed in January 2015 and have been in continuous operation since that time.

In December 2014, a service contract was taken out with ReFood to collect packaged food waste and take it offsite for anaerobic digestion leading to biogas and fertiliser production. Processing with aerobic composting of uncontaminated food waste and collection with anaerobic digestion of contaminated food waste has proved effective in the management of food waste at LGoS, and the initiative has contributed to overall improvements in recycling rates whilst yielding a plentiful supply of compost for use both onsite and in the community.

Case Study: Liverpool Circular Economy

Merseyside Recycling and Waste Authority (MRWA) launched the Circular Economy Club Liverpool City Region on 3rd September 2018. The Club aims to:

- Accelerate circular economy activities across the City Region
- Share experiences and expertise
- Develop and deliver resource management projects that will create a region where we reduce what we throw away, retain value and create employment in this growing part of the economy.

Membership of the Club supports businesses to deliver cost effective, sustainable products and services and maximise your organisation's triple bottom line by more efficient use of resources. It works to help those businesses access circular economy experts and best practice locally and globally, and drives the implementation of the circular economy, with a collaborative and innovative approach to competitiveness and job creation in our City Region.



KQSN Members and Friends

2030hub
 Bulky Bob's
 City of Liverpool College
 Emansys UK
 Everyman & Playhouse
 Faiths4Change
 Feedback Global / North West Regional Food Economy
 Green Blue Skies
 Groundwork
 KQ Liverpool
 Life Sciences UTC
 Liverpool 2030hub
 Liverpool Cathedral
 Liverpool & Sefton Chambers of Commerce
 Liverpool City Council
 Liverpool Clinical Commissioning Group
 Liverpool Friends of the Earth
 Liverpool Guild of Students
 Liverpool Hope University
 Liverpool Institute of Performing Arts
 Liverpool John Moores University
 Liverpool Metropolitan Cathedral
 Liverpool Museums
 Liverpool School of Tropical Medicine
 Liverpool Science Park
 Liverpool Women's Hospital
 Merseyside Environmental Trust
 Mersey Forest Trust
 Merseyrail
 Merseyside Recycling & Waste Authority
 Metal Culture
 National Oceanography Centre
 Royal Liverpool & Broadgreen University Hospital Trust
 Royal Liverpool Philharmonic
 The Rotunda
 University of Liverpool

Get in touch

The KQSN meets bi-annually and is hosted by partner organisations from across the network. Four leads share the administrative and chairing responsibilities for the network. If you would like to get involved in the KQSN, or simply want to know more about sustainability in the area, we welcome you to get in touch.



Lucy Antal

Lucy is Project Manager Regional Food Economy (NW) and previously Liverpool's Sustainable Food Cities Coordinator. Lucy is a sustainable food activist working with the N8 AgriFood network, Defra, the International Commission on the Anthropology of Food and Nutrition, and the Alexandra Rose Charity.

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Clare Casey

Clare is Sustainability Officer at University of Liverpool. Having recently gained ISO14001:2015, Clare is busy looking at how the EMS can be developed to not only improve environmental performance throughout the University but also deliver against the UN SDGs.

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Rachael Hanmer-Dwight

Rachael is Environmental Adviser at Liverpool John Moores University. Rachael plays an active role on a number of forums, including the North West EAUC Regional Group. She is currently engaged in a revision of the sustainability strategies at LJMU.

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Ian Stenton

Ian is Head of Sustainability at RLBUHT. Ian wrote the RLBUHT's award-winning Sustainability Plan 2017. He is a member of the Northern Sustainability & Health Network and is a Healthcare Ambassador for the 2030hub,

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