



SUSTAINABLE CITIES AND COMMUNITIES

GOVERNANCE AND OPERATIONS

UCSI University supports Sustainable Development Goal 11 (Sustainable Cities and Communities) through policies and operational practices that promote accessible campus spaces, cultural engagement and sustainable mobility. The University provides public access to selected facilities, including libraries, exhibition and gallery spaces, and campus open areas that support learning, cultural exchange and community interaction. Cultural events, exhibitions and performances organised by the University contribute to the local arts ecosystem and strengthen community engagement.

To promote sustainable commuting, UCSI operates a free shuttle bus service connecting the Kuala Lumpur campus to major public transport hubs such as Bandar Tasik Selatan, encouraging the use of shared transport. The campus is also located within walking distance of MRT and bus services, supporting low-carbon mobility and pedestrian access.

The University prioritises walkable campus planning, with pedestrian-friendly pathways connecting academic buildings and residential facilities. Student accommodation located within or near campus supports affordable housing and reduces commuting needs. In addition, campus development follows sustainable building practices and responsible land use, including development on previously developed sites where possible.



Shuttle buses



Free buggy ride in campus

TEACHING AND LEARNING

1. PLOGGING 2025

Plogging 2.0: Go Green around UCSI was organised by Youth Beyond Boundaries in collaboration with UCSI University to promote sustainable urban practices and environmental stewardship. The programme addressed poor waste management and littering in campus areas, fostering community participation in maintaining clean and resilient public spaces, directly supporting SDG 11.

Participants collected a total of 13.5 kg of waste while walking or jogging, raising awareness on proper disposal, waste segregation and sustainable habits. Immediate outcomes included heightened environmental awareness, shared responsibility and adoption of active, eco-friendly practices. At a broader level, the initiative strengthened community engagement in urban cleanliness and supported local sustainability efforts. The programme also contributes to SDG 3 and SDG 12.



2. ICAD X MOTAC: PRECIOUS OF MALAYSIA 2025

ICAD x MOTAC: Precious of Malaysia 2025 was organised by UCSI University in collaboration with the Ministry of Tourism, Arts and Culture at the International College of Art and Design (ICAD), Kuala Lumpur. The event aimed to preserve Malaysia's intangible cultural heritage, particularly traditional batik craftsmanship, amid urbanisation, supporting SDG 11.

The programme showcased contemporary reinterpretations of batik by ICAD lecturers, integrating traditional techniques with innovative design. Outputs included public exhibitions, knowledge sharing and strengthened collaboration between academia and cultural stakeholders. Immediate impacts are increased awareness among students, designers and visitors on cultural sustainability and heritage-based creativity. At a broader level, the event promoted Malaysia's cultural identity, supported creative industries and contributed to sustainable urban cultural development. It also directly advances SDG 4 and SDG 8.



3. COMMUNITY ARCHITECTURE X LANGKAWI

Langkawi Community Engagement Initiative was conducted by UCSI University in Langkawi, Kedah, involving 52 Diploma in Architectural Studies students under the guidance of lecturers Munzir Mahazir, Noor Fatehah, and Amar Muhammad. The initiative aimed to address the lack of inclusive and functional public spaces in tourism-affected areas, supporting SDG 11.

Students collaborated with seven local communities to deliver practical, community-driven interventions, including a pavilion at the Skatebowl, a community mural at the Treehouse Society and a functional dog wheelchair for WOOFF Langkawi. Immediate impacts included improved community facilities, enhanced accessibility and stronger place identity, while students gained hands-on experience in socially responsible design. At a broader level, the initiative promotes inclusive urban development, community resilience and sustainable built environments, also advancing SDG 4 and SDG 10.



RESEARCH AND DISCOVERY

1. MOBILE NETWORKS TOWARD 5G/6G: NETWORK ARCHITECTURE, OPPORTUNITIES AND CHALLENGES IN SMART CITY

(IEEE Open Journal of the Communications Society, (2025) Prof Ts Dr Shayla Islam)

This research examines the dynamic evolution of mobile networks, tracing the progression from 4G to 6G within the context of smart cities. It highlights the distinct roles of 5G and 6G, with particular emphasis on their unique mobility characteristics. Motivated by challenges observed in handover scenarios, especially in urban and high-speed environments such as trains, the study explores the complexities of implementing Distributed Mobility Management (DMM) during inter-handover transitions. The findings reveal a 38% success rate in handover failure recovery under current approaches. A comprehensive analysis is conducted on the message structures of various protocols and their extensions used to address handover challenges. The study not only identifies existing limitations but also proposes innovative protocol schemes to mitigate interhandover link failures and delays. By introducing the novel SRENMO DMM framework, the paper provides a deeper understanding of current research developments and outlines potential future directions, contributing to the advancement of handover management in high-traffic urban environments.

2. A NEW SEGMENT ROUTING WITH NEMO BSP BASED DISTRIBUTED MOBILITY MANAGEMENT APPROACH IN SMART CITY NETWORK

(Journal of Network and Computer Applications, Volume 242, 2025. Prof Ts Dr Shayla Islam)

Due to high hop counts and complex inter-domain handover processing, the existing Distributed Mobility Management (DMM) framework in smart cities suffers from moderate delay and reliability issues during the handoff process in critical environments. These challenges hinder network efficiency, increasing latency, packet delivery costs and reconfiguration requirements. In the present work, we proposed a novel Network Mobility Basic Support Protocol (NEMO BSP) with Segment Routing (SR) approach to enhance the network performance in distributed mobility management environments. The SR is integrated with existing network mobility methods to enhance performance. We also proposed an algorithm NEMO-SR to reduce the hop count for data transmission. In previous research, the authors have reported various routing methods. However, the existing network mobility and routing methods mainly focus on the distributed mobility scheme of routers, which can improve performance to a certain extent. Nevertheless, the segment routing-based distributed network mobility system can improve performance by optimising the number of hop counts. SR enables optimised path selection and minimises the overhead by reducing hop counts and reconfiguration needs. Thus, the proposed method can improve the key performance metrics such as Packet Delivery Cost (PDC), Latency, Tunnel Creation Rate (TCR), and Throughput. The proposed model introduces SR-specific tuning factors, which perform adaptive optimisation and adjust the impact of SR on network metrics according to real-time conditions. This adaptive tuning is instrumental in high-mobility environments and data-intensive networks typical of 5G and Beyond 5G systems. SR minimises signaling overhead and improves resource efficiency by effectively reducing the need for frequent tunnel reconfigurations. The performance of the proposed method is compared with the existing methods to analyse the performance. For the validation, both numerical analysis and simulation results were developed. The results prove that the proposed method supports mobility more efficiently and the performance of the proposed method improves in terms of throughput, latency, PDC and other parameters.

COMMUNITY AND PARTNERSHIP

1. PASAR MALAM CLEANING-LEO CLUB

On 27 March, UCSI Leo Club organised a community clean-up at Taman Connaught Pasar Malam (night market), Kuala Lumpur. This initiative involved student volunteers and staff and it addressed post-market waste accumulation in urban public spaces, directly supporting SDG 11.

Participants collected and segregated litter while engaging with the local community to promote responsible disposal. Immediate outcomes included a visibly cleaner market area, increased environmental awareness, teamwork and civic responsibility among participants. Local traders and residents benefited from a safer, cleaner environment. At a broader level, the programme strengthened community-university collaboration, reinforced sustainable urban practices and demonstrated how collective action can reduce environmental impacts. It also advances SDG 3 and SDG 12 by fostering cleaner, healthier and more sustainable urban public spaces.



2. LET'S RECYCLE 16.0

Lions and Leo's "Let's Recycle" Project took place on 2 November 2025 at PJ Eco Recycling Plaza, organised by UCSI Leo Club in collaboration with the Lions Clubs. The initiative addressed urban waste challenges and promoted sustainable recycling practices, supporting SDG 11.

Participants collected, sorted and delivered recyclables to the facility, gathering a total of 11,904.8 kg, with major contributions from Lions KL, Selangor Empire and Nilai. Immediate outcomes include reduced urban waste, increased environmental awareness and strengthened youth engagement in sustainability. At a wider level, the project fostered community collaboration, promoted responsible consumption and encouraged leadership in environmental stewardship. It directly advances SDG 3, SDG 12 and SDG 17 by supporting cleaner urban environments, responsible recycling practices, safer public spaces and cross-community partnerships for sustainable action.



3. KLANG RIVER FESTIVAL 2022–2026 PROJECT

Klang River Festival 2025 – Community Urban Revitalisation Project was held from 15 to 17 August 2025 along the Klang River in Kuala Lumpur, organised by UCSI University’s School of Architecture and Built Environment. The initiative addressed urban disconnection and environmental degradation, aiming to reconnect communities with the river and promote sustainable urban practices.

Participants contributed to riverside improvements and engaged in environmental awareness activities, supported through partnerships with local government, NGOs and water authorities. Immediate impacts included cleaner, safer and more accessible riverfronts, along with heightened awareness of sustainable urban design. At a broader level, the festival fostered community engagement, multi-stakeholder collaboration and environmental stewardship. It also directly advances SDG 3, SDG 4 and SDG 17 by creating inclusive public spaces, promoting health and outdoor activity, supporting learning on sustainability and strengthening collaborative urban revitalisation efforts.

