

AUB Sustainability *Report*

2019





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List of Acronyms and Symbols

| | |
|---------|---|
| ASHRAE | American Society of Heating, Refrigerating and Air-Conditioning Engineers |
| AUB | American University of Beirut |
| AUBMC | American University of Beirut Medical Center |
| BS | Bachelor of Science degree |
| CARS | Collaborative for the Study of Inhaled and Atmospheric Aerosols |
| CCECS | Center for Civic Engagement and Community Sciences |
| CHSC | Charles Hostler Student Center |
| CIO | Chief Information Officer |
| EHSRM | Environmental Health Safety and Risk Management |
| EIA | Environmental Impact Assessment |
| EQUAL | Education Quality and Learning for All |
| E-waste | Electronic Waste |
| FAFS | Faculty of Agricultural and Food Sciences |
| FAS | Faculty of Arts and Sciences |
| FHS | Faculty of Health Sciences |
| FM | Faculty of Medicine |
| FOA | Food and Agriculture Organization of the United Nations |
| FPDU | Facility Planning and Design Unit |
| GHI | Global Health Institute |
| GTS | Grounds and Transfer Services |
| HE | His Excellency |
| HEPA | High-Efficiency Particulate Air |
| HSN | Rafic Hariri School of Nursing |
| HVAC | Heating, Ventilation and Air Conditioning |
| IFI | Issam Fares Institute for Public Policy and International Affairs |
| IFPRI | International Food Policy Research Institute |
| IT | Information Technology |
| LDEM | Landscape Design and Ecosystem Management |
| LED | Light Emitting Diode |
| LEED | Leadership in Energy and Environmental Design |
| MENA | Middle East and North Africa region |
| MS | Master of Science degree |
| MSFEA | Maroun Semaan Faculty of Engineering and Architecture |
| NCC | Nature Conservation Center |
| NGO | Non-Profit Organization |
| NI | Neighborhood Initiative |
| OHR | Occupational Health and Risk Committee |
| OSB | Suliman S. Olayan School of Business |
| PC | Personal Computers |
| PPD | Physical Plant Department |
| REVA | Reverse Vending Machines |
| RO | Reverse Osmosis |
| SDGs | Sustainable Development Goals |
| SDSN | Sustainable Development Solution Network |
| SSEA | Students for Sustainable Energy for All |
| UI | University of Indonesia |
| UK | United Kingdom |
| UL | University Library |
| UNICEF | United Nations International Children's Emergency Fund |
| VP | Vice President |



1.

INTRODUCTION

Founded in 1866, the American University of Beirut bases its educational philosophy, standards, and practices on the American liberal arts model of higher education. A teaching-centered research university, AUB has around 1,650 instructional faculty, 1,266 staff and a student body of around 9,376 students. The University encourages freedom of thought and expression and seeks to graduate men and women committed to creative and critical thinking, life-long learning, personal integrity, civic responsibility, and leadership.

The University, which was granted institutional accreditation in June 2004 by the Commission on Higher Education of the Middle States Association of Colleges and Schools in the United States and reaffirmed in 2016, includes seven faculties: Agricultural and Food Sciences, Arts and Sciences, Engineering and Architecture (Maroun Semaan Faculty), Health Sciences, Medicine, Nursing (Rafic Hariri School), and Business (Suliman S. Olayan School).

Sustainability is one of the main pillars of AUB long-term strategies and commitments. Sustainability teaching, research and practices are embedded within the institution culture and beliefs. This annual report highlights the work that was done by AUB over the course of the year 2018, as well as the plans for the future in each of the following pillars:

1. General environment
2. Energy efficiency and climate change
3. Safety and well-being
4. Waste management
5. Water resource management
6. Social responsibility
7. Sustainable transport
8. Education and research
9. Sustainable development goals

The University has made a public commitment to sustainability by joining recently the Sustainable Development Solutions Network (SDSN). The Network promotes practical solutions for sustainable development, including the implementation of the Sustainable Development Goals (SDGs), by mobilizing global scientific and technological expertise (universities, research centers, and other knowledge-based institutions). Moreover, The University is also participating in the University of Indonesia (UI) GreenMetric ranking. UI GreenMetric World University Rankings was initiated by University of Indonesia (UI) in 2010. The aim of this ranking is to provide the results of an online survey regarding the current condition and policies related to Green Campus and Sustainability in Universities all over the world. To add on, AUB's Environmental Health Safety and Risk Management (EHSRM) unit has developed a draft sustainability policy (Appendix 1) to further express the University's commitment towards sustainability.

2. RESPONSIBILITIES

| Position/Office | Responsibilities |
|--|--|
| EHSRM | <p>Addressing environmental and sustainability concerns as follows:</p> <ul style="list-style-type: none"> - Uphold the university’s environmental responsibilities in its vision and mission statement, to play a leading role in establishing a culture of environmental concern by actively pursuing a policy of environmental best practice. - Promote an environment that is healthy, safe and conducive to excellent education and provides good occupational conditions. - Compile on a yearly basis all sustainability related initiative and action plans and develop the university sustainability report. - Support and follow up on the implementation of the sustainability and climate change mitigation action plan by setting regular meetings with the concerned stakeholders. - Manage the implementation of sustainability principles related to sound environmental and energy management. - Raise awareness on sustainability issues among staff, faculty and students. |
| AUBotanic | <ul style="list-style-type: none"> - Ensure the conservation of the living environment that makes up a large proportion of the AUB campus. - Educate members of the community, both within and outside of AUB, about the natural environment with which we co-exist and the importance of preserving this environment for future generations. - Aim to increase the appreciation of the campus as a sanctuary for living things and to serve as a model for a sustainable relationship between people and nature. - Increase and manage green areas at AUB. |
| Facility Planning and Design Unit (FPDU) Physical Plant Department(PPD) | <ul style="list-style-type: none"> - Manage the implementation of sustainability principles applicable to energy management, water conservation, infrastructure, and operations and budgeting. - Implement green building principles in all renovation and construction projects. |

| | |
|---|--|
| Procurement and Contracts Administration | <ul style="list-style-type: none"> - Apply green and environmental sound purchasing principles. |
| IT | <ul style="list-style-type: none"> - Use sustainability rated PC’s, laptops and monitors for all equipment unless there is an unavoidable technical requirement precluding this. - Reuse and recycle IT equipment whenever feasible. - Migrate from physical data centers to cloud based data centers to reduce the impact on the environment - Reduce the use of paper and consumables through bulk changes in settings and centralizing multi-function printing devices - Reduce the use of personal printers where not required. - Actively encourage University awareness of sustainable IT practices and principles. |
| Office of Communication | <ul style="list-style-type: none"> - Sustain awareness campaigns to promote sustainability and environmental protection in collaboration with EHSRM and other stakeholders. - Implement Green Events. |
| Office of Student Affairs | <ul style="list-style-type: none"> - Promote sustainability in all student activities. - Support student groups that deal with sustainability. |
| Office of Auxiliary Services | <ul style="list-style-type: none"> - Strive to reduce parking areas on campus and ensure an efficient use of all parking spots. - Develop transportation initiative to decrease private vehicles on campus. |
| Deans, faculty, Office of Grants and Contracts | <ul style="list-style-type: none"> - Allocate research funds related to sustainability topics. - Incorporate sustainability principles in courses offered in all the University majors and programs. |
| Deans, Directors, and Department Heads | <ul style="list-style-type: none"> - Ensuring that sustainability principles are disseminated within their area of responsibility. - Hold conferences, workshops, educational sessions, awareness campaigns and trainings on sustainability topics. - Incorporate sustainability in the department’s budget. - Ensuring that Faculty, Staff and Students are equipped with the required knowledge to abide by the sustainability initiatives, including identifying training needs and ensuring training appropriate to each individual’s responsibility is available and attained. - Implementing Green Events (Checklist attached in Appendix 2). - Implementing environmentally preferable purchasing. - Incorporating environmental protection in their activities. - The Faculty of Agriculture and Food Science compiles data related to SDGs on a yearly basis. |
| All staff, faculty and students | <ul style="list-style-type: none"> - Complying with University sustainability policy and practices. - Taking an active role in promoting sustainability. - Refraining from activities that may cause pollution. - Participating whenever possible in events related to sustainability |

3. ACTIONS AND INITIATIVES

3.1. General Environment

- **AUBotanic** progressed in the labelling of AUB trees.
- **EHSRM** shared the guide on how to be a Green AUBite with new AUB students. The guide provides insights to help make small changes in the daily habits that have a big impact on the environment. The guide includes eco-friendly tips related to food, transportation, waste, water, energy, purchasing and other sustainable practices. EHSRM also worked on the Environment Impact Assessment (EIA) for the replacement of AUBMC's cytotoxic waste incinerator and organized the scoping meeting of the study. On the other hand, EHSRM organized the public meeting for the installation of two sterilization units for biohazardous waste treatment.
- **The Department of Landscape Design and Ecosystem Management (LDEM)** hosted several lectures related to modern ecosystems sustainable design such as "Novel Urban Ecosystems: New Nature(s) For The Anthropocene".
- **The Center for Civic Engagement and Community Services (CCECS)** held an event related to environmental sustainability.
- **The Faculty of Agricultural and Food Sciences (FAFS)** hosted an event on Food and Environment Security. FAFS also collaborated with the Faculty of Arts and Sciences (FAS) Department of Political Studies and Public Administration for the seminar session on "Environmental Politics in the Middle East: Local Struggles, Global Connections".
- **Munib and Angela Masri Institute for Energy and Natural Resources** organized a lecture on Earth Initiative 2100.
- **Neighborhood Initiative** with the support of the Tobacco-free Taskforce at AUB initiated cigarette filters recycling and anti-littering campaigns. Moreover, Ms. Mona Hallak hosted a lecture on Livable, Equitable and Sustainable City.

3.2. Energy Efficiency and Climate Change

- The Department of Architecture and Design at the Maroun Semaan Faculty of Engineering and Architecture (MSFEA) organized the sustainability design week and hosted a seminar on "Advanced Ecological Buildings".
- FAFS and the Faculty of Health Sciences (FHS) hosted a seminar on "Ferrates: Emerging Advanced Materials in Biomedical, Environmental, Energy and Industrial Applications". On the other hand FAFS collaborated with Food and Agriculture Organization of the United Nations (FAO) an educational session on "Climate Smart, Innovative Food Preservation and Processing Technologies Applied by Women in rural Environments in the Near East and North Africa".
- AUB organized a roundtable discussion on Climate Change's Dire Consequences for the Middle East.
- Munib and Angela Masri Institute of Energy and Natural Resources, ASHRAE Lebanese Chapter and the Department of Mechanical Engineering hosted the Third International Conference on Efficient Building Design - Materials and HVAC Equipment Technologies. Masri Institute also organized two educational seminars on energy related topics.
- The Institute of Financial Economics at the AUB hosted the first MENA Energy Economics Conference.
- LDEM organized a lecture on "Forest and Water Urbanisms to Address Climate Change".
- Issam Fares Institute for Public Policy and International Affairs (IFI) hosted a seminar on energy sources. IFI also organized a student competition on climate change with Banque Libano-Française.

- The American University of Beirut through the Facilities Planning and Design Unit (FPDU) has developed a campus masterplan. In this masterplan, AUB recommends that all new developments are to achieve a minimum certification of LEED Gold. Recently, Penrose Hall dormitory building was renovated and was converted into a green building with LEED gold certification, one of the most prestigious green building design certification. FPDU has also developed a brochure summarizing the green elements of the new renovated Penrose (Appendix 3). AUB ensures that the green building elements that are targeted during any construction and renovation projects touch on the location and transportation, indoor environmental quality, sustainable sites, energy and atmosphere, water efficiency, materials and resources.
- PPD, in their ongoing plan of installing energy efficient appliances, replaced 8476 non-efficient lighting fixtures by LED lights.
- As part of EHSRM's action plan to reduce AUB's carbon footprint that was assessed in 2017, LED lights were installed as replacement to non-efficient lighting fixtures in tennis courts, indoor basketball courts, Hostler Center and outdoor gardens.

3.3. Safety and Well-being

- EHSRM along with the Occupational Health and Risk Committee organized a Safely AUB campaign (appendix 4). This campaign included the installation of safety awareness booths in several areas on campus where safety quizzes were administered and faculty and staff won different prizes. Moreover, the committee developed an action plan to improve the safety culture that was assessed at AUB (appendix 5).
- The Health and Wellness Center organized the annual wellness fair. The fair included stands where a multidisciplinary team of healthcare professionals provided students, staff and faculty free health tips, screenings, and assessments. The activities included a healthy snack preparation.

3.4. Waste Management

- EHSRM is responsible for the waste management program at AUB. Throughout the years, EHSRM has developed several waste management initiatives. Below is a description of these initiatives along with the latest updates:

1. Reverse Vending Machines (REVA): Initially started in September 2013 through an agreement with Servcorp for the installation of 3 REVA for the recycling of plastic and cans at Ada Dodge, CHSC and AUBMC cafeteria and providing gifts for recycling. In January 2016, 3 new machines were installed at OSB cafeteria, Boustani Hall and Penrose Hall with a new and more appealing redemption scheme through Spinneys. 8 more machines were added on consignment basis in October 2016. A donation agreement was signed in April 2017 with Atria to donate 17 REVA machines to AUB (worth \$130,000) after the end of their contract. Recyclable quantities are being recorded. The average monthly quantity of collected bottles and cans is 20,000. The total number of bottles and cans collected for recycling since program initiation till December 2018 reached 906,189. The program is currently managed through a contract with Arcenciel.

2. Red and Blue: Initiative started in February 2015 through an agreement with Sukleen. 760 indoor sets of Red and Blue recycling bins were distributed in campus building and 24 sets for outdoors. Each set is comprised of 2 bins: red for plastic, metal and glass and blue for paper and cardboard. A map for the distribution of bins on campus was developed. Recyclable quantities are being recorded. 28,067 kg of recyclables were collected in 2018. The program is managed through a contract with Arcenciel.

3. Chemical waste management program: Hazardous chemical wastes from Campus and Medical Center laboratories (around 8 to 9 tons every 2 years) are collected by EHSRM, labeled and packaged and sent for proper disposal in Europe as per Basel Convention regulation for the transboundary movement and disposal of hazardous waste. In 2018, a contract was awarded to Pegasus Waste Management UK for the export of around 12 tons of hazardous chemical waste to UK.

4. Chemical waste recycling program: chemicals are being recycled internally by other departments (mainly Chemistry) and externally through a local paint industry to recycle xylene waste.

5. Bio-hazardous waste management program: All bio-hazardous waste generated from the Medical Center and AUB labs (around 36 tons/month) are being separately collected in yellow bio-hazardous waste bags and sent for proper disposal by shredding and autoclaving at arcenciel treatment center. Efforts are being concentrated on reducing the waste generation rates. A biohazardous waste transport vehicle was procured for the safe transport of Biohazardous waste from Campus to Medical Center.

6. Radioactive waste management: All radioactive waste generated from labs using radioactive material in research or from the hospital are separately collected and segregated into long-lived and short lived and stored at AUB and AUBMC for decay and then they will be disposed of according to their categories.

7. Battery collection and safe disposal program: batteries are being collected from buildings on campus at specific collection points for their safe disposal by encapsulation in concrete blocks along with asbestos wastes. 41 Collection points are available on Campus. Total quantity of batteries (AA, AAA, lithium, cadmium, etc) collected and recycled/safely disposed of is around 500 kg/year.



8. Asbestos material disposal: Asbestos containing materials (vinyl tiles, sheets, pipes, etc) are being removed under complete isolation, wet conditions, negative pressure, and filtration of the air through HEPA filters and disposed of in concrete blocks. 2 to 3 concrete blocks containing asbestos material (about 6 m³ each) are being generated each year. In 2018, asbestos materials were removed from Dale home and a guideline was prepared (Appendix 6).

9. Phasing out plastic on campus: AUB did several initiatives targeting plastic reduction on campus. Installation of Reverse Osmosis units to provide drinking water, plastic reduction campaign (AUB EHSRM has initiated a plastic reduction awareness campaign "Bottle plastic; Say no to plastic bottles". The campaign included several events, plastic gourdes distribution and educational videos), green events checklist, diners' survey (EHSRM conducted a survey to study behavior of diners and to assess their willingness to change their dining habits towards more sustainable ones), banning single use plastics in cafeterias and distributing water gourdes to AUB students were among these initiatives. A timeline for phasing done plastic bottles at AUB was also prepared (Appendix 7).

10. Recycling/crushing of fluorescent lamps: AUB generates fluorescent lamps (containing mercury vapors) on monthly basis from its operations. The lamps crusher reduces AUB's environmental damage by making the crushed glass a recyclable item and by capturing all the hazardous particulates and vapors. In 2018, around 5,000 fluorescent lamps were crushed and sent for recycling.

11. Electronic waste recycling: E-waste items should not be disposed of in the normal trash due to their high concentrations of toxic chemicals and heavy metals. AUB has deployed several e-waste collection bins on campus. The collected e-waste are then recycled by a licensed Lebanese company. AUB has agreed with Verdetech, one of the few licensed Lebanese waste management company, on collecting and properly managing electronic waste. Moreover, another part of the e-waste generated by the university are sent to the Materials Management Department for selling to external entities, if the conditions are suitable.

12. Green waste composting: wooden bins are available in several areas on campus. They are mainly used to compost green waste from tree clippings and gardening collected by the grounds keeping department on campus.

13. Food waste composting: composters are available near faculty apartments at AUB. All the residents are trained on the proper organic waste disposal process. The output of this process is compost. Compost is then used as soil conditioner in AUB planted fields.

- **EHSRM** has organized a recycling awareness day and composting awareness day.
- **EHSRM** gave training sessions on the use of composters at faculty apartment and training on recycling for GTS and Janitorial Services.
- Two student clubs (Evergreen and SSEA clubs) organized events on recycling.
- The Neighborhood Initiative installed public recycling bins on AUB Medical Gate.
- **The Center for Civic Engagement and Community Service (CCECS)** worked on two projects related to waste management outside AUB.



3.5. Water Resource Management

- **FAFS** organized several seminars on water resources: "The Water-Energy-Food-Population-Economy Nexus: Lessons from the Menara Research Project", "Natural Noble Metal Nanoparticles: Formation, Stabilization, and Toxicity in Aquatic Environment" (in collaboration with the FHS) and "Lecture on Potential and Limitations of Non-conventional Water Use in Agriculture in Arid and Semi-arid Regions".
- **CCECS** mentored a community service project led by AUB students on protecting the Assi River.
- **IFI** held several seminars on water resources.
- **EHSRM** completed **AUB's** water Footprint report. As a step to decrease the water footprint in AUB, EHSRM changed of all the water fixtures in Ada Dodge building with water saving, water sense fixtures (project was implemented through a donation by GROHE).
- **EHSRM** is also working on the Installation of Reverse Osmosis units to provide drinking water. Drinking water quality on Campus has deteriorated over the past years and all water fountains were put out of service. By installing the ROs, drinking water will be made available for everyone and specifically to students. In 2018, EHSRM, along with several stakeholders, put into operation the RO system in Murex (installed 27 water fountains in 4 buildings) and IOEC system (connected to 24 drinking water fountains in 4 buildings) and is working on two systems (West hall and CHSC) by installing new RO units and 17 drinking water fountains for 4 buildings.

3.6. Social Responsibility

- AUB President Fadlo R. Khuri, World Bank MENA VP Ferid Belhaj and the Minister of Finance HE Ali Hassan Khalil participated in a session on "Preparing for the future: Dialogue on youth, education, jobs and technology".
- AUB student clubs have organized several social events. Evergreen club, Red-Cross club, rotaract club, SSEA club, UNICEF club, visual arts club, safer campus club, dreamcatcher club, health club, mental health awareness club, MMKN club and young Motors club are among the clubs that worked on events related to sustainability. Awareness sessions, lectures, smoking awareness events, biking activities, olive harvesting, elderly visit, health awareness and hiking are among the events organized by these clubs.
- AUBotanic organized several activities with children and students and performed several botanic tour with different organizations.
- Anis Makdisi Program in Literature held a seminar on philosophical approaches to sustainable development.
- AUB organized a museum lecture on "Anfeh: From nature to culture conservation; a scientific challenge".
- Neighborhood Initiative worked closely with the community on several social awareness projects.
- IFI hosted several seminars on economic policy and political economy.
- CCECS mentored AUB students during a community service project on Ehmej cultural trail.
- EHSRM has developed a checklist that is being implemented during events. The green events checklist is being used in events to reduce negative environmental and social impacts and increase positive economic effects. Green events practices include recycling and waste management, energy efficiency, green purchasing and transportation practices, and the use of local and organic foods, among others.

3.7. Sustainable Transport

- AUB has implemented several initiative to reduce the use of cars on campus:

1. Shuttle/bus operating inside campus
2. Efficient use of parking spots by allocating the available spaces to 130 % of their capacity (ie. parking stickers given to cars exceed the number of parking spots by 30 %)
3. AUB promotes the use of bicycles to commute to university. Bicycle parking ranks are available next to all entrances to the campus.
4. AUB protection office reduced the daily vehicle trips inside the University from 82 trips/day to around 30 trips/day by restricting vehicle access to the University, coordinating and reducing the trips of several departments and by controlling 24/7 the gates of the university.
5. AUB encourages walking. In fact, as stated in the parking and traffic policy, AUB consider that pedestrians have the right of way on campus.
6. The Goods Receiving Area, which was inside the campus, was pushed, in 2018, to the periphery with access from outside the campus. This move has reduced drastically the number of delivery trucks needed to service the university from accessing the campus.

- AUB has procured several electrical cars to be used on campus.
- The Collaborative for the Study of Inhaled and Atmospheric Aerosols (CARS) in collaboration with the Ministry of Environment organized a seminar on “Air pollution from generators and vehicles: How Severe and What Can Be Done?”

3.8. Education and Research

- FAFS worked on integrating sustainability and practice in the curriculum and held an educational session on this topic.
- The International Food Policy Research Institute (IFPRI) of the FAFS launched the IFPRI Global Food Policy Report 2018 on food security from global to MENA.
- AUB is still leading the sustainable educational program in the region by offering several programs directly linked to sustainability (MS Energy Studies, MS environmental science, MS food security, MS applied energy, BS agribusiness etc.)
- In 2018, around 64% of the research funds signed by the Office of Grants and Contracts were dedicated to sustainability issues.

3.9. Sustainable Development Goals (SDGs)

AUB, through FAFS leadership, formally joined (April 1, 2019) the Sustainable Development Solutions Network. The Network promotes practical solutions for sustainable development, including the implementation of the Sustainable Development Goals (SDGs), by mobilizing global scientific and technological expertise (universities, research centers, and other knowledge-based institutions). The multidimensional global network

provides an excellent platform for effectively translating expertise into action through participatory roles in global discussion and decision-making. AUB will share its own expertise in evidence-based problem solving related to the specific challenges particular to our region, i.e., refugee influx, primary resource scarcity, climate change, etc.

Since January 2019, FAFS led AUB in mapping completed and ongoing learning, research and outreach activities of the AUB faculties, centers, institutes, and other units in relation to one or more of the 17 SDGs (Appendix 8). Over 300 projects were identified across key thematic priority areas of the SDSN, including: The World in 2050, Humanitarian-Development Linkages, Gender, Human Rights, Social Inclusion, Education-Quality-and-Learning-for-All (EQUAL), Health for All, Sustainable Agriculture and Food Systems, Forests-Oceans-Biodiversity-and-Ecosystem Services, and Sustainable Cities: Inclusive-Resilient-and-Connected. Through engagement in SDSN's Thematic Networks, AUB will have new opportunities for teaching sustainable development to the next generation of systems thinkers in Lebanon and the region by bringing increased collaboration in education, research, outreach, and capacity building with other national, regional, and global institutions. The below table shows the distribution of the SDG projects and initiatives that were conducted in 2018 among AUB faculties and departments.

| | SDGs | | | | | | | | | | | | | | | | |
|-----------------|---------------|----------------|-------------------------------|----------------------|--------------------|-------------------------------|--------------------------------|------------------------------------|--|------------------------|--|--|--------------------|----------------------|------------------|---|--------------------------------------|
| | 1- No Poverty | 2- Zero Hunger | 3- Good Health and Well-being | 4- Quality Education | 5- Gender Equality | 6- Clean Water and Sanitation | 7- Affordable and Clean Energy | 8- Decent Work and Economic Growth | 9- Industry, Innovation and Infrastructure | 10- Reduced Inequality | 11- Sustainable Cities and Communities | 12- Responsible Consumption and Production | 13- Climate Action | 14- Life below Water | 15- Life on Land | 16- Peace and Justice Strong Institutions | 17- Partnerships to achieve the Goal |
| FAFS | 2 | 4 | 3 | 1 | | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 4 | | 4 | | |
| MSFEA | | | 1 | | | 1 | 1 | | 1 | | 2 | 2 | 1 | | 1 | | |
| OSB | | | | 1 | 1 | | | 3 | 1 | 3 | 2 | 2 | 1 | | | 3 | |
| FAS | | | 1 | 5 | 5 | 3 | 1 | | | | 1 | 1 | | | 1 | 7 | 3 |
| HSOON | 1 | 1 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | | | | | 1 | 2 | 2 |
| FHS | 2 | 1 | 11 | 5 | 3 | 1 | 1 | 1 | 1 | 9 | 1 | | 1 | | 1 | 3 | 1 |
| FM/AUBMC | | | 7 | | | | | | | | | | | | | | |
| GHI | | | 13 | 9 | 10 | | | | | 2 | | | | | | | 12 |
| IFI | 3 | 1 | 3 | 2 | 2 | 3 | 2 | 5 | | 6 | 2 | 1 | 2 | | | 5 | |
| CCECS | 4 | 3 | 6 | 6 | 8 | 2 | 1 | 3 | 4 | 5 | 5 | 1 | | | | | |
| NCC | | | 1 | 2 | | 1 | 3 | 1 | | | 2 | 2 | 6 | 1 | 6 | | |
| IT | | | 1 | 8 | | | 2 | 1 | 2 | 6 | 1 | | 1 | | 1 | | 2 |
| PPD/FPDU | | | 1 | 2 | | 2 | 2 | | | | | 5 | 1 | | | | |
| EHSRM | | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | | |
| UL | 1 | 1 | 1 | 4 | 1 | 1 | | | 1 | 2 | 2 | | | 1 | 1 | 2 | 1 |
| NI | | | | | | | | | | | 15 | | | | | | |
| Total | 13 | 11 | 52 | 48 | 32 | 18 | 16 | 18 | 14 | 36 | 36 | 17 | 17 | 2 | 16 | 22 | 21 |

4. MONITORING AND INDICATORS

In order to track the implementation of the greening initiatives at AUB, several indicators were adopted by the University. These indicators were derived from the UI Greenmetric initiative and cover all the components targeted in AUB long-term sustainability plans. On a yearly basis, EHSRM collects data from the concerned department and do the necessary calculation whenever needed.

The results are then compared to previous years and whenever possible benchmarked with other academic institutions. These indicators help when setting up future plans and projects. The below table summarize the indicators adopted by AUB.

| Category | Indicator | Values, benchmarks and comments |
|---|---|--|
| General environment | Total area on campus covered in forest vegetation (%) | 35.03% |
| | Total area on campus covered in planted vegetation (%) | 10% |
| | Total area on campus for water absorption besides forest and planted vegetation | 30.6% |
| | The total open space area divided by total campus population | 14 m2 |
| | Percentage of university budget for sustainability efforts within a year | 11 % |
| Energy Efficiency and Climate change | Rate of energy efficient appliances used on campus | 64.8 % |
| | Smart building implementation rate | 100 % |
| | Number of renewable energy sources in campus | 3 (solar heating, PV cells and cogeneration) |
| | The total electricity usage divided by total campus population (kWh per person) | 1,527 Kwh |
| | The ratio of renewable energy production divided by total energy usage per year | 1.15% |
| | The total carbon footprint divided by total campus population | 1.29 |

| | | |
|------------------------------|---|-----------|
| Safety and well being | Number of safety related events per year | 2 |
| | Overall result of the safety culture assessment | 3.45/5 |
| Waste | Weight of batteries collected per year | 500 kg |
| | Number of fluorescent lamps crushed per year | 5,000 |
| | Number of plastic bottles and cans collected through the reverse vending machine/year | 208,005 |
| | Weight of recyclables collected through the Red and Blue recycling system | 28,067 kg |
| | Weight of hazardous chemicals sent for treatment per year | 12 tons |
| | Number of water bottles saved through the installed drinking water fountains per year | 612,000 |
| Water | Number of water conservation program implemented per year | 5 |
| | Number of water recycling program implemented per year | 2 |
| | Rate of water efficient appliances used in the University | 71.5% |
| | Rate of treated water consumed compared to all water sources | 52% |
| Social | Number of social events linked to SDGs conducted per year | 62 |
| Transportation | Total number of vehicles divided by total campus population | 0.0076 |
| | Total number of zero emission vehicles | 6 |
| | Ratio of the parking area to total campus area | 3.8% |
| Education | Ratio of sustainability courses to total courses / subjects | 30.5% |
| | Ratio of sustainability research funding to total research funding | 64% |
| | Total number of scholarly publications on sustainability per year | 90 |
| | Total number of events related to sustainability per year | 75 |
| | Number of student organizations related to sustainability | 11 |

5. Plan for 2019–2020

| | | |
|---|-----------------------------|---------------|
| Procure water efficient fixtures to replace inefficient old water fixtures | PPD | Ongoing |
| Monitor continuously waste related data | EHSRM | Ongoing |
| Start conducting energy audits on AUB's building and implement measures to reduce energy consumption | EHSRM | March 2020 |
| Determine the University Carbon Footprint | EHSRM | March 2020 |
| Reduce the number of cars accessing the campus | Protection | December 2019 |
| Launch an awareness campaign on energy saving practices targeting all AUB's community | EHSRM/Communications Office | June 2020 |
| Compile the different SDGs related project or initiatives done in all AUB faculties and department | FAFS | January 2020 |
| Test AUB's wastewater quality and propose the proper treatment if needed | EHSRM | February 2020 |

| Action | Responsible | Target date |
|---|--|--------------------|
| Labelling of AUB trees | AUBotanic | Ongoing |
| Initiate a sustainability taskforce comprising AUB faculty and staff from the different units | AUB management | February 2020 |
| Organize educational seminars on sustainability | AUB Faculties | Ongoing |
| Organize social and educational events related to sustainability | Student clubs AUBotanic EHSRM Neighborhood Initiative FAFS | Ongoing |
| Offer courses related to sustainability and the SDGs | AUB Faculties | Ongoing |
| Implement sustainability measures in the renovation of Architecture building <i>(currently under renovation)</i> | FPDU | December 2020 |
| Phase out single use plastic bottles from AUB campus as per the proposed action plan | Plastic free taskforce | March 2020 |
| Conduct an awareness campaign on safety | EHSRM | April 2019 |
| Implement the action plan developed to improve the safety culture at AUB | OHR committee EHSRM | June 2020 |
| Procure LED lighting fixtures to replace inefficient source of lighting | PPD | Ongoing |

Appendix 1 Sustainability Policy

1. AUB recognizes that its activities aiming at providing high quality educational, research and workplace facilities have environmental impacts which are, or can be potentially significant. AUB acknowledges the importance of protecting the environment and integrating sustainability in its plans and practices. Accordingly, AUB is committed to comply with environmental legislation and standards and to mitigate and manage its impacts keeping environmental harm to a minimum in a sustainable, economically rewarding and technically feasible manner.

2. AUB is committed to all the seventeen Sustainable Development Goals that are embedded in its strategic plans.

3. AUB through EHSRM will work to reduce the university's environmental impacts and proactively contribute to a sustainable development through continuous improvements.

4. AUB will promote the environmental and sustainability policy by:

a. Complying with legal requirements set for the university's environmental issues.

b. Reducing the environmental impact from the university's operations.

c. Making all possible efforts to reduce its carbon footprint by incorporating energy efficiency measures into purchasing, maintaining all plant and equipment, raising awareness, implementing thermal comfort policy, following sustainable building design, installing building management and control systems, using renewable energy sources, using high efficiency HVAC systems and monitoring the carbon footprint on bi-yearly basis.

d. Making all possible efforts to reduce its water footprint by incorporating water efficiency measures into purchasing, maintaining all plant and equipment, implementing active and preventive maintenance programs, retrofitting water saving devices, promoting awareness, installing building management and control systems, capturing and reusing rainwater and installing graywater recovery systems.

e. Maximizing energy efficiency by procurement energy efficient appliances and controlling energy consumption on campus.

f. Increasing environmental awareness among the students through the university's study programs and across academic disciplines.

g. Contributing to the development of a sustainable society through relevant knowledge dissemination.

h. Encouraging pollution prevention and waste abatement through awareness raising, implementing activities and projects and improving infrastructure.

i. Providing training and internship opportunities for students in environmental related issues.

j. Making environmental sustainability a top priority in campus land-use, transportation, operations, and building planning.

k. Seeking to acquire LEED certification for new buildings.

5. AUB through EHSRM promotes opportunities, initiatives and measures that enable the university to minimize its waste generation wherever possible, promote re-use, recycling and composting, and apply responsible hazardous waste management, in order to minimize its waste.

6. AUB through AUBotanic strive to reduce ecological footprint by minimizing the Universities impact on natural ecosystems, planting indigenous flora, extending campus green space, enhancing diversity of campus vegetation and using campus ground and green infrastructure in teaching and research.

7. AUB is committed to purchasing products and services that cause minimal adverse environmental impacts. Procurement and contracts administration department will procure energy efficient and water efficient devices whenever convenient.

8. AUB will strive to promote sustainable travel by supporting the use, wherever possible, of efficient public and communal transport, bicycles and walking, encouraging the purchase of electrical vehicle on campus, optimizing and reducing parking lots on campus, reducing car access on campus, supporting a pedestrian friendly campus and reducing traffic on campus.

Appendix 2 Green Events Checklist

A green event seeks to reduce negative environmental and social impacts and increase positive economic effects. Green events practices include recycling and waste management, energy efficiency, green purchasing and transportation practices, and the use of local and organic foods, among others.

General Practices

- Local goods and services are purchased.
- Supplies are purchased in bulk.
- Supplies are borrowed, rented, or purchased secondhand.

Venue Choice

- Choose a venue that has good access via public transport and for disabled people.
- Ask potential venues for their in-house environmental policy and priorities.
- Choose a venue interested in sustainability issues, and tell them that's why you chose them.
- Venues offering in-house technical equipment and support (e.g. staging, audio-visual) can reduce equipment transportation.
- Consider hiring rather than purchasing equipment; specify the most efficient available.
- Consider video conferencing and/or recording the event for wider (internet) access

CO2 Emissions (including travel)

- Take measures to reduce CO2 emissions from delegates travelling to the venue, i.e. provide information about local public transport (with pedestrian routes) and encourage its use.
- Where appropriate promote car sharing e.g. circulate attendees list in advance.
- Minimize unnecessary lighting, heating / air conditioning.

Food and Food Services

- Plan food requirements carefully to avoid unnecessary waste (e.g. use event registration form to obtain information).
- Ensure that dietary requirements are catered for and offer vegetarian choices.

- Plan meals using seasonal local produce wherever possible. Consider organic produce.
- Consider donating left over food to local charity or sending for local composting.
- Ensure tea/coffee is Fair Trade and provide local/dispenser water as an alternative (if you must use bottled water, make sure it is local!).
- Minimize use of individually packaged food/drink items (e.g. provide milk / cream in jugs rather than individual plastic cartons).
- Use reusable crockery, glassware and cutlery where possible (to reduce waste).
- Don't use Styrofoam products.
- Choose food that does not require extensive service ware.
- Use washable service ware.
- Use recyclable service ware (if washable service ware is not).
- Use recycled-content service ware.
- Use reusable serving trays and dishes.
- Use cloth tablecloths or cloth napkins.
- Sustainable centerpieces are used.
- Attendees are educated about sustainable foods, when served.
- Use event unbleached or chlorine-free paper products (like coffee filters and napkins).
- Adopt caterers committed to sustainability practices.

Meeting Communications and Printed Materials

- Use online event registration and email to manage invites and RSVPs.
- Post event guides/agendas/programs online prior to the event or distribute them electronically.
- Provide printed materials on request only.
- Use double-sided printing for printed materials.
- Use recycled paper for printed materials.
- Use name badges that are made with recycled materials.
- Reuse name tags, supplies, artwork, and decorations from previous events.
- Collect name tags or badges at the end of the event to be reused or recycled.
- Print signs, posters, and banners without a date so that they may be reused.
- Use signage and electronic media to inform participants about sustainability practices.
- Share event sustainability features with attendees in pre-event literature.

Promotional Items

- Limit or eliminate gifts or favors.
- Use locally made gifts or favors.
- Use gifts or favors that are made using sustainable materials.
- Use promotional products that are made from recycled or recyclable materials.

Travel

- Use electric or hybrid vehicles.
- Use and encourage public transportation.
- Encourage carpooling.

Waste

- Ensure paper, plastic, beverage, and recycling bins are present, highly visible and labeled with appropriate signage.
- Ensure organics bins are present, highly visible and labeled with appropriate signage.
- Have volunteer assistants at recycle and/or organics stations to guide proper disposal during peak times.
- Provide reminders to participants to use recycling stations in event/meeting area



Appendix 3 Penrose Hall Sustainability Brochure



Penrose Hall Green Building

Penrose Hall Dormitory Building, located close to Bliss street on the west part of the upper campus of the American University of Beirut, was designed in 1961. The original design was composed of a six-story rectangular block wrapped with external corridors and curved balconies. The repetitive floors were composed of four-rooms units and rooms in each unit share one common wet area.

When renovated in 2018, the typology of the 60's building is preserved while a new contemporary language is injected to the inner skin and the rooms layouts.

The dormitory is upgraded and the plans are reorganized in order to provide each room with its own bathroom and kitchenette, resulting into the addition of a seventh floor to maintain the same number of occupants.

However, the major renovation upgrade is in converting the Penrose building into a Green building with LEED Gold certification that has various sustainability features.

The American University of Beirut is committed to educate the tenants and visitors of Penrose Hall dormitory building about its GREEN features and their benefits.

Prepared by AUB Facilities Planning & Design Unit



LOCATION AND TRANSPORTATION

- Public transit within walking distance.
- Daily necessities and diverse surrounding uses within walking distance.
- Renovation project: previously developed land.
- 82.35% reduction in parking footprint.
- Accessible green spaces around the building.



INDOOR ENVIRONMENTAL QUALITY

- 83.39% of the regularly occupied areas within the building have access to quality views: providing connection to natural outdoor environment.
- Occupants in individual and in shared spaces have access to interior lighting controls and can adjust the lighting to suit their tasks and preferences: promoting productivity, comfort and well-being.
- Occupants in individual and in shared spaces have access to thermal comfort controls allowing them to adjust air temperature and air speed of air-conditioning, ventilating and heating systems in their local environments: promoting comfort and well-being.
- Smoking prohibited in the building site and in the entire AUB campus: preventing exposure of building occupants, indoor surfaces and ventilation systems to environmental tobacco smoke.
- Using low-emitting materials within specific VOC content for the building interior products and their assemblies: reducing concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.



SUSTAINABLE SITES

- 31.69% of total site area consists of open space, 36.38% of which is vegetated: open spaces encourage interaction with the environment, social interaction, passive recreation and physical activities.
- Roof and outdoor passages consist of reflective materials to reduce heat island effect: minimize impact on microclimate and human & wildlife habitat.
- Exterior lighting designed to avoid light trespass and reduce uplights: improve night visibility and reduce consequences of development for wildlife and people.



ENERGY & ATMOSPHERE

- 29.4% reduction in total energy cost of the building achieved by optimizing and enhancing the building's energy performance (using glazing materials and construction materials with specific thermal properties, efficient VAC systems and lighting fixtures, providing heat recovery ventilation units on outside air supply...): reducing environmental and economic impacts associated with excessive energy use.
- Increase in the self-supply of renewable energy by having 23.59% of the total energy by cost from renewable energy (solar panels): reducing environmental and economic harms associated with fossil fuel energy use.
- Non-CFC refrigerants in the building HVAC&R system: eliminating the use of environmentally harmful pollutants at the global level.
- Energy meters installed to provide building level data representing total building energy consumption and electrical demand.



WATER EFFICIENCY

- 52.96% less potable water consumption through the selection of low-flow low-flush fixtures and fittings and through the use of collected rainwater for flushing the toilets: reducing the indoor water use by 9,404,736L/year.
- The landscape is consuming 50% less potable water through the selection of adaptive plants and the use of drip-irrigation system: reducing the outdoor water use by 35,930L/year.
- All washing machines in the laundry room are ENERGY STAR certified: reducing indoor water consumption by using high-efficiency appliances.
- Water meters are installed on domestic water system, brackish water system and irrigation system: monitoring and benchmarking water use over time.



MATERIALS & RESOURCES

- 50.51% of the existing building materials have been reused in the renovated building: encouraging adaptive reuse and optimizing the environmental performance of products and materials.
- Allocation of dedicated area, accessible to waste haulers and building occupants, for collection and storage of recyclable materials (mixed paper, corrugated cardboard, glass, plastics and metals).
- Diversion of 75% of the total demolition and construction waste materials: minimize the consequences of construction and demolition debris on the environment.
- Furniture items in public areas are selected to be compliant with furniture sustainability standards.

Prepared by AUB Facilities Planning & Design Unit

Appendix 4

EHSRM and Occupational Health and Risk Committee Safety Awareness



Appendix 5 Action Plan to Improve the Safety Culture at AUB

| Action | Responsible | Target date |
|--|-------------------------------|----------------|
| Develop a mandatory online safety orientation training for newly hired employees. | EHSRM Human Resources (HR) | March 2020 |
| Provide bi-monthly general safety training sessions (1 hour session) for newly hired employees. These sessions should be given for employees that are unable to conduct the online safety training orientation sessions. | EHSRM HR | March 2020 |
| Conduct regular inspections and visits to different departments and work with department heads to push for implementation of identified safety measures | OHR Committee | December 2019 |
| Coordinate an awareness campaign with AUB and AUBMC HR on hazard reporting. The hazard reporting process should be well known by employees. | EHSRM HR Communication | February 2020 |
| Develop a KPI to track the implementation of the preventive measures elaborated during the risk assessment project (e.g. Number of control measures implemented / total number of control measures proposed) | OHR Committee | June 2020 |
| Ensure that the OHS Committee is meeting regularly and involve the committee in all safety related projects, issues, complaints etc. | OHR Committee | September 2019 |
| Set regular bi-annual meetings with the safety wardens. Provide them with training sessions (if needed). Update the list regularly and send at least annually, by email through HR, the list of safety wardens to all staff. | EHSRM HR | March 2020 |
| Provide a training session for AUB's managers on employees/employers rights and responsibilities in relation to workplace health and safety. Stress on the need to diffuse these information to their subordinates. | EHSRM HR | June 2020 |



Appendix 6 Guidelines for Asbestos Roof Tiles Removal in Dale Home

General guidelines for site preparation

- All asbestos abatement projects in the Campus, Medical Center, and AREC shall be done in accordance to the guidelines of EHSRM.
- EHSRM shall be notified at least two weeks before the job will be executed.
- The work area shall be clearly defined by the project manager and contractor. All areas and conditions included as part of the work area shall be identified.
- Establish an asbestos work area such that there is expected to be exposure to airborne asbestos fibers only within the boundary of this work area. Only workers who are directly involved in the asbestos work are allowed to enter this work area.
- The contractor shall be required to seal the work area, ensure that critical barriers are placed over all openings, ensure the heating, ventilation and air-conditioning (HVAC) system in the work area is turned off and sealed.
- Use impermeable polyethylene sheeting on the floor of the work area.
- Display warning signs, preferably with pictures, at high-human traffic areas and at the entrance to the asbestos work area. These signs must remain posted until the work site has been cleaned up.
- All movable objects, e.g. furniture, should be removed from the asbestos work area to prevent these from being contaminated with asbestos. Immovable objects should be covered completely with impermeable polyethylene sheeting. If objects have already been contaminated, they should be thoroughly cleaned with an industrial vacuum cleaner equipped with a High Efficiency Particulate Air (HEPA) filter or wet wiped before they are removed or covered.
- Precautions should be taken to secure the area to avoid falling tiles and debris to surrounding areas below.
- There should be no eating, drinking or smoking in the asbestos work area.
- Prevent public access to the work area.
- Avoid dropping or the unnecessary breaking of tiles to reduce the release of fibers into the air.

- Changing rooms should be provided for workers to remove asbestos-contaminated work clothing. These rooms should be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated work clothing and equipment.
- Worker protection measures, including protective clothing, respirators and other equipment shall be the responsibility of the contractor. EHSRM shall review and approve worker protective measures and methods prior to the beginning the project.

Removal of Roofing Tiles

- All tiles removal works shall be entirely under water. Keep the material wet while you remove it. Wetting minimizes asbestos fibers from being released during removal. The material should remain wet during removal and until waste disposal occurs.
- Put plastic sheeting on the ground under the work area to contain pieces that may fall.
- Gently pry up material using a flat bar or similar tool so that the nail heads are exposed and can be pulled out, or clipped off with heavy-duty wire cutters. Cut the nails while avoiding contact with the asbestos tiles.
- Take roofing materials off in as many whole pieces or sections as possible. Do not damage material on purpose, do not drop material, do not throw material from ladders or roof and do not drive over material. The method of removal cannot shatter, crumble, pulverize, or reduce the material to dust. Place the material on the ground in a non-work area or in separate containers.
- The removed tiles shall be sealed in plastic bags in order to prevent dust dispersion.
- All the sealed bags shall be stored in areas assigned by EHSRM pending final disposal.
- A wet mat shall be put on the exit side of the construction site.
- Personnel shall never leave the site with their Personal Protective Equipment (PPE) on.
- EHSRM shall halt any tile removal project at any time if this project is not executed properly in accordance with the strict guidelines of the EHSRM.

Cleaning Up the Asbestos Work Site

- Clean all equipment used in the asbestos removal work using water or a HEPA-filtered vacuum. This must be done before they can be removed from the asbestos work site.
- Remove and dispose of the dirty coveralls and all other disposable PPEs properly.
- Dispose of all polyethylene sheets used as barriers and floor linings as asbestos waste.
- Wet-wipe or clean the outer surfaces of the disposal bags containing the asbestos waste before disposal. Please take appropriate measures to protect workers from asbestos dust and other hazards when doing asbestos work.

Disposal of asbestos

- Asbestos waste, debris, bags, containers, equipment and asbestos-contaminated clothing and sheeting consigned for disposal should be collected into sealed, impermeable bags or other closed, impermeable containers.
- All bags or containers of asbestos containing material should be consolidated and stored in a designated asbestos waste area approved by EHSRM. This area should be distinguished from other areas by means of warning labels.
- Asbestos containing material shall be encapsulated in concrete blocks as follows:
 1. The block external dimensions are (LXWXH) 300 cm x 160 cm x 180 cm
 2. The base should be casted first with reinforced concrete.
 3. Reinforcement shall be installed then and the cast prepared.
 4. The asbestos containing waste shall be placed inside the block.
 5. Then casted in concrete.
 6. The walls and base of the block shall have a thickness of 20 cm each.

Appendix 7 Timeline for Phasing Down Plastic Bottles at AUB

| Activity | Dec-18 | Jan-19 | Feb-19 | Mar-19 | Apr-19 | May-19 | Jun-19 | Jul-19 | Aug-19 | Sep-19 | Oct-19 | Nov-19 | Dec-19 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Complete Installation of ROs and water fountains to ensure supply and access to potable water: | | | | | | | | | | | | | |
| Installation of piping and fountains in women dormitories | █ | | | | | | | | | | | | |
| Installation of RO and fountains in West Hall and surrounding buildings | | | | | | | | | | █ | █ | █ | █ |
| Piping and connections of surrounding building to West Hall RO | | | | | | | | | | █ | █ | █ | █ |
| Installation of fountains in buildings surrounding IOEC | █ | █ | | | | | | | | | | | |
| Installation of RO in CHSC | | | | | | | | | | █ | █ | █ | █ |
| Installation of fountains in CHSC | | | | | | | | | | █ | █ | █ | █ |
| Completing connections to FAFS, Biology, Chemistry, and Physics | | | | | | | | | | | | | █ |
| Installation of RO and fountains in Penrose | | | | | | | █ | █ | █ | █ | █ | █ | █ |
| Installation of RO and fountains in Jafet library | | | | | | | | | | | | | █ |
| Launch an awareness campaign | | | | | | | | | | | | | █ |
| Distribute Reusable Water Bottles to new students | | | | | | | | | █ | █ | █ | █ | █ |
| Ban the use of plastic bottles during events and stop selling plastic bottles at cafeterias and in vending machines | | | | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ |

Appendix 8

Contribution of AUB's Faculties, Centers, Institutes, and Units to the SDGs through Education, Research and Outreach

| AUB Faculties, Centers, Institutes and Units | Research | Disciplines | Programs | Centers and Initiatives | Other |
|--|---|---|--|---|-------|
| FAFS | <p>Water, Agriculture, Ecosystem and Remote Sensing (SDGs 6, 7, 9, 11, 13, 15)</p> <p>Diet, obesity, physical activity, non-communicable diseases and food security (SDGs 2, 3, 4)</p> <p>Landscape for culture and socio-ecological health (SDGs 9, 11, 13, 15)</p> <p>Plant and Animal Sciences (SDGs 2, 12, 13, 15)</p> <p>Sustainable Food Systems (SDGs 1, 2, 3, 6, 8, 12, 13, 15)</p> <p>Food Applications and Consumer Research(SDGs 1, 2, 3, 8, 10)</p> | <p>Agriculture</p> <p>Nutrition and Dietetics</p> <p>Food Science and Technology</p> <p>Landscape Architecture</p> | <p>Agribusiness</p> <p>Food Security</p> <p>Public Health Nutrition</p> <p>Food Safety</p> <p>Ecosystem Management</p> <p>Rural and Community Development</p> <p>Food Security Program</p> | <p>Advancing Research Enabling Communities Center (AREC)</p> <p>Environment and Sustainable Development Unit (ESDU)</p> <p>Water-Energy-Food-Health Nexus Renewable Resources Initiative (WEFRAH)</p> | |
| MSFEA | <p>Environment and energy (SDGs 6,7,13)</p> <p>Buildings and structures (SDGs 11,15)</p> <p>Urban challenges (SDGs 11,12)</p> <p>Health (SDGs 3,12)</p> <p>Electrical and computer engineering (SDG 9)</p> | <p>Architecture and Design</p> <p>Civil and Environmental Engineering</p> <p>Electrical and Computer Engineering</p> <p>Chemical and Petroleum Engineering</p> <p>Mechanical Engineering</p> <p>Industrial Engineering and Management</p> | <p>Applied Energy (ME)</p> <p>Energy Studies (MSc)</p> <p>ProGreen Diploma, with energy, buildings and water specialization</p> <p>Urban Planning and Policy (MUPP)</p> <p>Biomedical Engineering (ME and PhD)</p> <p>Environmental and Water Resources Engineering (EWRE, ME and PhD)</p> | <p>Aerosol Research Lab</p> <p>Be Public</p> <p>Biomedical Engineering Lab</p> <p>Climate Design Lab</p> <p>Chemical Reaction Engineering and Catalysis</p> <p>Comfort, Health, and Productivity in Built-in and Outdoor Environments</p> <p>Design Impact Lab</p> <p>Experimental Fluid Mechanics Lab</p> <p>Ergonomics Lab</p> <p>Process Intensification Group</p> | |

| | | | | | |
|-------------------|--|--|--|---|--|
| <p>OSB</p> | <p>Women And Careers Pay Equity Women’s Work Experiences (SDG 5, 8, 10)</p> <p>Corporate Governance Transparent Financial Reporting (SDG 10, 16)</p> <p>Business Ethics Corporate Social Responsibility Corruption and economic security Nepotism (SDG 8, 10)</p> <p>Fair Marketing and Advertising TV Consumption Patterns (SDG 12)</p> <p>Financial Institutions and Development Social Enterprises Entrepreneurial Development Business Strategies For Environmental Sustainability (SDG 11, 13, 16)</p> <p>Sustainable Shared Value Sustainable Production (SDG 8, 11, 12)</p> <p>E-government (SDG 9, 16)</p> <p>Business Ethics Education In Lebanon and Developing Nations Sustainability Cases (SDG 4)</p> | <p>Business Information Decision Systems</p> <p>Finance, Accounting and Managerial Economics Management, Marketing and Entrepreneurships</p> | <p>BBA</p> <p>MBA</p> <p>MFIN</p> <p>MHRM</p> <p>MSBA</p> <p>EMBA</p> <p>Executive Education</p> | <p>Darwazah Center for innovation system and entrepreneurship</p> <p>Rami Fouad Makhzoumi Initiative in Corporate Governance Corporate Social Responsibility initiative</p> | |
| <p>FAS</p> | <p>Air pollution-related mortality (SDG3)</p> <p>Access to clean energy in homes (SDG7)</p> <p>Air quality in cities (SDG11)</p> <p>Ensure the sustainability of the ecosystem (SDG15)</p> <p>Waste management (SDG12)</p> <p>Characterization of groundwater flow and transport on KARST aquifers (SDG6)</p> <p>Improve teaching and learning in K-12 school settings (addressing specific subject areas, special learning needs, psychosocial wellbeing, school leadership (SDG4)</p> | <p>Chemistry</p> <p>Geology</p> <p>Psychology</p> <p>Computer Science</p> <p>Education</p> | <p>Anis Makdisi Program in Literature</p> <p>University Preparatory Program (UPP)</p> | <p>Writing Center</p> <p>Science and Match Education Center (SMEC)</p> <p>Institute of Financial Economics</p> <p>Women and Gender Studies Initiative</p> <p>Center for American Studies and Research (CASAR)</p> | |
| <p>HSO</p> | <p>Non-Communicable Diseases Research; symptom management, mental health, cardiovascular health, aging, cognitive performance, substance use (SDGs 2, 3, 4, 5, 10)</p> <p>Health Systems Research; work environment, quality of care, human resources, continuing education, rationing of care, refugee crisis (SDG 3, 4, 8, 9, 10, 16, 17)</p> <p>Education Research; capacity building, teaching modalities, novice and expert (SDG4)</p> <p>Community Health Nursing Research; health promotion, disease prevention, primary health care, capacity building, (SDGs 1, 5, 6, 7, 15, 16, 17)</p> | <p>Nursing</p> | <p>-BSN (TS-BSN, BA/BS-BSN, TS-BSN under discussion)</p> <p>-MSN (Adult Care and Gerontology Clinical Nurse Specialist, Psych Mental Health Clinical Nurse Specialist, Community and Public Health Nursing, Nursing Administration and Management)</p> <p>Hybrid MSN programs in Nursing Administration and Nursing Education (under discussion)</p> <p>-PhD</p> | <p>Center for Nursing Research (CNR)</p> <p>REP projects</p> | |

| | | | | | |
|---|---|---|--|---|---|
| <p>FHS</p> | <p>Water Quality, Waste Management, Toxicology, Environmental Management, Environmental Health (SDGs 3, 6, 7, 9, 11, 13, 15)</p> <p>Occupational Health, Child labor, Decent work (SDGs 1, 3, 4, 5, 8, 10)</p> <p>Nutrition, Obesity, Food Security (SDGs 2, 3, 10)</p> <p>Health of Disadvantaged Communities including migrants, displaced, and refugees (SDGs 1, 3, 4, 5, 10, 16)</p> <p>Conflict and Health (SDGs 3, 10,16, 17)</p> <p>Sexual and Reproductive Health, Women’s Health (SDGs 3, 5, 10)</p> <p>Mental Health (SDG 3)</p> <p>Communicable and Non-Communicable Diseases, Injury control, Tobacco control, Substance use, Hearing Loss, Radiation (SDG 3, 4, 10)</p> <p>Youth Wellbeing, Aging (SDG 3, 10)</p> <p>Ethics in Research, Human Rights (SDG 3, 4, 10, 16)</p> <p>Health Systems Management, Access to Quality Care, Human Resources in Health Systems (SDG 3, 4, 10)</p> | <p>Public Health</p> <p>Environmental Health</p> <p>Health Promotion</p> <p>Epidemiology</p> <p>Biostatistics</p> <p>Toxicology</p> <p>Health Management and Policy</p> | <p>Public Health Epidemiology</p> <p>Clinical Research</p> <p>Public Health Nutrition</p> <p>Healthcare Leadership</p> <p>Environmental Health</p> <p>Health Communication</p> <p>Medical Laboratory</p> <p>Medical Imaging</p> <p>Medical Audiology</p> | <p>Public Health Practice (CPHP)</p> <p>Knowledge to Policy (K2P)</p> <p>Research on Population and Health (CRPH)</p> | |
| <p>AUBMC/FM</p> | | | | | <p>SDG3:</p> <p>AUB Mobile Clinic to provide health services to Syrian refugees in informal tented settlements</p> <p>Partnerships with NGOs to address war injuries, burns, spinal injuries, and others</p> <p>Partnership with Yaduna to establish Women’s Heart Health Center for Lebanese and Arab women</p> <p>Establishment of Urgent Care Centers to support displaced Syrian patients (>30,000 to date)</p> <p>Needy patient funds amounting to \$10M/year (> 40 funds)</p> <p>Adopting technologies to provide patients in rural or difficult areas with access to specialized care</p> <p>Specialized programs with funds to support congenital deformities</p> <ul style="list-style-type: none"> -Cardiac -Cleft -Others |
| <p>Global Health Institute (GHI)</p> | <p>Research Capacity Building for Health in Conflict (R4HC) MENA (SDGs 3,4,5,17)</p> <p>Research on Trauma Post Conflict (PrOTeCT) (SDGs 3,4,5,17)</p> <p>Antimicrobial Resistance in Conflict(SDGs 3,4,5,17)</p> <p>National Institute for Health Research (NIHR) Research Unit on Health in Situations of Fragility (SDGs 3, 17)</p> <p>SEEK Trial: The effect of increased Self-Efficacy and Knowledge on improved sexual and reproductive health service use (SDGs 3,5,17)</p> <p>Do unregistered and registered Syrian refugees adopt different informal adaptive mechanisms for resilient livelihoods? A case study from the Bekaa Valley region in Lebanon (SDG10)</p> | | <p>Mobile University for Health(SDGs 3,4,5,17)</p> <p>Global Health Learning and Development Platform (in-person and online trainings) (SDGs 3,4,5,17)</p> <p>MOOC on Refugee Health in the Middle East(SDGs 3,4)</p> | <p>Center for Research and Education in the Ecology of War(SDGs 3,4,5,17)</p> <p>Global Health Forum(SDGs 3,4,5,17)</p> <p>Sijilli: Personal Electronic Health Records for Refugees(SDGs 3,5,17)</p> <p>Health Initiative Map(SDG3)</p> <p>Middle Eastern Center for Humanitarian Advancement (MECHA)(SDG 4,17)</p> <p>Employing eHealth to Enhance Equity, Access and Quality of Chronic Care Services in Primary Health Care in Lebanon(SDGs 3,5,10,17)</p> | |

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| <p>IFI</p> | <p>Civil Society, Gender and Policy (SDG 5, 10,16) Climate Change Adaptation and Water-Energy-Food Nexus (SDGs 2,6,7,12, 13, 16) Cities (SDGs 6,8, 10, 11, 13, 16) Education and youth (SDGs 3,4,6,10, 16) Refugees and Policy (SDG 1, 3, 8,10) Informal Systems (SDGs 1,6,7,8,10,11) Implementing Agenda 2030 (SDGs 1,3,4,5,8,10,16)</p> | | <p>Civil Society Actors and Policymaking Climate Change and the Environment Education and Youth Policy in the Arab World Energy Policy and Security in the Middle East Arab and International Affairs Refugee Research and Policy in the Arab World Social Justice and the City</p> | | |
| <p>CCECS</p> | | | | | <p>GHATA: Bringing Education to Refugees Settlements (SDGs: 2-3-4-5) Digital Skills Training (SDGs:1-2-4-5-8-9) PADILEIA/University Bridge Program (SDGs: 4-5-9) Science Education: A Key to University Access for Refugee Girls (SDGs: 4-5) Higher Education English Access Program + Language Exchange Program (SDGs: 4) Safe and Sound Psychosocial Support (SDGs: 3-5) Upgrading Urban Markets - Suq Sabra (SDGs: 3-6-11) Urban Agriculture: Ein el Helwe Refugee Camp (SDGs: 1-5-8-11) Animated Public Trail – Karm El-Zeytoun (SDGs: 11) Jeanne d’Arc: a Pedestrian Friendly Model for all Beirut (SDGs: 11) The Child-Friendly Shabriha Challenge (SDGs: 10) Community Kitchens (SDGs: 1-2-3-5-8) Economic Empowerment of Underprivileged Women in Batloun (SDGs: 1-9-10) Pre-Post Natal Health 101 (SDGs:3) After-school Support in Tebnine Orphanage (SDGs: 4-10) Sports for Change: Empowering Girls and Boosting Social Cohesion (SDGs: 3-5-10) Protecting the Assi River (SDGs: 6) Alternative Energy in Bint Jbeil High School (SDGs: 7) Matn Road Safety Initiative (SDGs: 9) After-school Support in Tebnine Orphanage (SDGs:10) Environmental Sustainability in Public Schools (SDGs: 11) Compost Barja (SDGs: 12)</p> |
| <p>NCC</p> | | | | | <p>NCC activities are at the intersection of Research, Education and Community Outreach and cover SDGs 3, 4, 6, 7, 8, 11, 12, 13, 14, and 15 through its 5 main programs: (1) Addressing pollution together, (2) Community driven development, (3) Enabling environmental leaders, (4) Addressing ecological and cultural challenges and (5) Discovering medicinal plants</p> |

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| <p>IT</p> | | | <p>Design of an online journalism diploma (SDG 4,10)</p> <p>Development of free online courses in partnership with GHI on sustainable development topics (SDG 3, 4, 10, 17)</p> <p>Development of an online diploma on renewable energy (PROGREEN) (SDG 4,7)</p> <p>Partnership with RIPE NCC to offer an integrative course (SDG 9)</p> <p>Partnership with CECCS to offer e-learning modules for the refugees in Lebanon (SDG 4,10)</p> <p>Partnership with Al-GHURAIR foundation (SDG 4, 10)</p> | | <p>PLATFORMS:</p> <p>Developing High Performance Computing capabilities to serve AUB and the region. (SDG 9)</p> <p>ABLE - Leading national efforts in accessibility and assistive technologies. (SDG 4,10)</p> <p>Transforming infrastructure to utilize cloud and managed services. (SDG 7) Establishment of open and online learning platform. (SDG 4,10)</p> <p>Implement enterprise systems to automate and stream line administrative processes. (SDG 4, 11, 13,15)</p> <p>Create center of excellence in partnership with industry. (SDG 8, 17)</p> |
| <p>PPD and FPDU</p> | | | | | <p>Installation of Solar Heating Panels – Energy Efficiency LED Lights in all renovated areas and the CHSC.</p> <p>Encouraging staff to quit smoking and participate in the AUB Smoking Cessation Plan.</p> <p>Registering PPD staff in English and Computer courses.</p> <p>Enhancing the drinking water quality – Use of safe cleaning detergents, pesticides and rodent bates for indoor and outdoor use. Installation of drinking water RO’s across the campus. Installation of 2-200 m3 RO’s to convert brackish water to domestic</p> <p>Install efficient electric motors for pumps, elevators and air compressors. Use of Brackish water in bathrooms toilet seats – Use of Sea water for the Heat Exchanger of the Central/Cooling Plant – Mixing brackish and domestic water for irrigation – Insulation of all underground and above ground service pipes to reduce energy loss.</p> <p>Introduce catalytic converters on all Diesel Generators at the Power Plant to minimize pollution.</p> |
| <p>EHSRM</p> | | | | <p>CONCERNED UNITS:</p> <p>Environmental and Chemical Safety</p> <p>Biosafety and Sanitation</p> <p>Occupational Health and Safety</p> <p>Risk Management</p> | <p>ACTIVITIES:</p> <p>Control the spread of infectious diseases (SDG 3)</p> <p>Ensure access to safe and affordable drinking water for all, safely managed sanitation services and increase water-use efficiency (SDG 6)</p> <p>Increase the share of renewable energy of the total energy use (SDG 7)</p> <p>Promote safe and secure working environments for all workers (SDG 8)</p> <p>Make sure infrastructure and retrofits are more sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and processes (SDG 9)</p> <p>Environmentally sound management of food, chemical and all waste (SDGs 11 and 12)</p> |

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| <p>AUB Libraries</p> | | | | | <p>RESOURCES:</p> <p>Informed decision-making by providing equitable quality access to information and resources in all fields including but not limited to medical, agricultural, social and environmental research. SDGs: 1, 2, 3, 4, 6, 10 and 16.</p> <p>Neutral, welcoming, safe and inclusive spaces that make learning accessible to all. SDGs: 4, 5, 9 and 10.</p> <p>Open Access to research materials: AUB Scholar works and AUB databank. SDGs: 14, 15, 16.</p> <p>PROJECTS:</p> <p>Promoting cultural inclusion and understanding. SDG 11</p> <p>Documentation and preservation of cultural heritage for future generations. SDG 11</p> <p>AUB Libraries partner with local, regional and national civil society institutions, governments and organizations from private sectors to offer community based programs and services that engage and empower citizens, in turn, strengthening societies. SGD 17</p> <p>Some digital projects: Palestinian Oral History, Al-Adab magazine, Arabic Collection Online and more.</p> <p>SERVICES:</p> <p>AUB Libraries support literacy programs. SDG 4</p> <p>AUB Libraries support researchers to access, apply and reuse research and data to create new knowledge. SDG 4</p> <p>Monthly Sessions related to:</p> <ul style="list-style-type: none"> - Information Literacy - Data Literacy <p>Online support:</p> <ul style="list-style-type: none"> - Libguides - Online chat <p>One-on-One</p> <ul style="list-style-type: none"> - Research assistance sessions |
| <p>Neighborhood Initiative (NI)</p> | | <p>Agriculture Anthropology Public Health Engineering and Transportation Architecture Urban Design and Planning Landscape Architecture</p> | | | <p>SDG11:</p> <p>Pedestrian Friendly Streets Ras Beirut Congestion Studies Green Mobility Supporting the Dalieh of Raouche Preservation campaign Oral History of Ras Beirut Oral History of Fishermen in Ras Beirut Beirut Design Week 2018 Solid waste management and reduction of waste Increasing green cover footprint in the city Curating public performances and events to activate public spaces in the neighborhood with local NGOs</p> |



EHSRM

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