L U C E R N A

SPECIAL SELECTION:

Sustainability

In 1942, Fortune magazine ran a cover by cartographer Richard Edes Harrison that depicted the Earth as seen from above the Pacific Ocean – a view of the Hawaiian Islands, with only a hint of the California coast to the east, separated by a vast expanse of water from imperial Japan that crouched in a blue horizon near the binding. At first, the editor rejected Harrison's cover, which was commissioned for an issue about the United States entry into World War II, as being drawn at a useless scale lacking in relevant detail. Harrison fired back, saying that this war and everything after it will be defined by the closing of such a great distance. He must have sounded like Christopher Columbus speaking before the Spanish Court four-hundred-and-fifty years earlier, his hand atop a painted wooden globe.

Today, we continue to reshape our understanding of the planet as a result of discoveries and events at local and global scales. As this journal goes to print, a special edition of the National Geographic magazine has just been released with stories about the human role in the globally changing climate, including recommended policies and behaviors that might lessen the emission of greenhouse gases resulting from the rapid consumption of organic resources. Significantly, spatial patterns, such as regional climates, are more often being scrutinized using a temporal scale, like the rate of change. Our fate and the fate of millions of species depend on our new appreciation of space and time.

This issue of Lucerna features a section dedicated to writings by UMKC undergraduate students about the interplay between humans and the environment. Chris Green's historical geography of the Hawaiian Islands provides a four-billion year perspective of environmental change, including the implications of human settlement; Tom Gault offers a review of key philosophical arguments about western society's relationship with nature; and the results of the 2007 Sustain UMKC Competition are presented to our readership. The top ten suggestions for improving the environmental sustainability of development and operations at the University of Missouri – Kansas City are excerpted, including the two

ideas voted most practicable, Emily Monroe's description of a campus-based bicycle loan program, and James Ramirez's design concept for landscaped roofing.

The editorial staff of Lucerna would like to thank everyone who contributed to this section, especially the forward thinking faculty fellows of the UMKC Honors Program, who sanctioned its creation.

Be encouraged by these writings,

Dustin Grey Jensen
Co-Editor-in-Chief

James J. Ramirez

Gardens in the Sky

One of the main contributors to the problem of global climate change in urban areas is a phenomenon known as the "urban heat island" effect. Densely populated areas comprised of more concrete than flora absorb and retain heat to such a degree that they raise the temperature of the surrounding area significantly. Furthermore, concrete structures adversely affect the nesting patterns of birds and insect life and, being that they retain heat, require more energy to sufficiently cool the internal climate of these structures. Hence, this is a problem that takes a toll not only on the external climate but the internal climate as well. However, there is a solution to this problem that offers many positive benefits to humans as well as plant and animal life.

What the University of Missouri-Kansas City needs is an urban roof garden initiative. There are many flat roofs on campus that contribute to the problem created by the "urban heat island" that could be turned into elevated green spaces. The benefits of sustaining a roof garden are many. Allow me to briefly examine a few of the advantages of these green-topped structures. First, there is the direct impact these spaces have on combating the aforementioned phenomenon by insulating the roofs of buildings so they are not able to absorb and retain heat to such a degree that it affects the surrounding area. In fact, this type of structure actually cools and cleans the surrounding air. Of course, the added green insulation also takes care of the problem of expending more energy to cool the interior of a building. Since the building does not absorb and retain as much heat it is naturally cooler than a building with a bare concrete roof. Roof gardens also provide nesting places for birds and insects while at the same time minimizing runoff that contributes to flash flooding (a problem that the Plaza, UMKC campus and the surrounding area is very familiar with). There is also an aesthetic value not to be overlooked. On a pleasant day, a roof garden would make an ideal place for students and faculty to peacefully study and commune with each other and view the skyline of our beautiful city all while above the bustle of activity taking place below.

I envision this as a project that we as a community of learners could undertake together. Students and faculty in the Department of Architecture, Urban Planning and Design could confront the spatial and logistical arrangement of the roof garden. Students and faculty in the Environmental Science and Studies Departments would be perfect for selecting and caring for the native plants that would furnish the roof. This could be an ideal venture for a student or group of students to work

on as a senior or graduate level project. Furthermore, we would not be the only institution in the city to begin implementing urban roof gardens. Black and Veatch, in conjunction with the Mayor's office, already have a roof garden initiative in the works for the parking structure of their Ward Parkway offices.

There would no doubt be many structural, fiscal and liability issues that would need to be work out to make this a successful and feasible endeavor but I have faith that the citizens of this university and community could overcome these obstacles through a collective will to do something good for their environment. This would be a project that I believe may people would latch onto, take pride in and see the benefits of and would stand as a lasting symbol of the ingenuity, conscientious design, civic awareness and environmental progress of today's students and faculty.

Emily Monroe

La Promesse de Velo'v: Creative Transportation

With its half-million inhabitants, discouraging taxes on all things automotive, and a public transit union that seems to understand the occasional strike as a happy extension to their annual six weeks of vacation time, the agglomeration of Lyon, France, made a giant step in personal transportation in the summer of 2005 by introducing Veol'v, a public bicycle system. Lyonnais pedestrians, after having registered with the city as a Velo'v user and made a deposit, may use their credit card to unlock a bike from a special electronic rack. They may ride the bicycle as long as the care to: the first twenty minutes are free, and beyond that there is an hourly charge. They may lock the bicycle back into any of Lyon's nearly two hundred Velo'v stations throughout the city. The website where this information is available (http://www.belov.grandlyon.com/) touts the service as "simple and practical for all your short trips."

IN evaluating this system's practicality in Kansas City, two issues immediately come to mind. First, Kansas City's unfortunate history of unplanned sprawl has rendered our destinations much farther from one another than perhaps similar errands would constitute in dense, medieval Lyon. Second, as a result of this phenomenon, most people in Kansas City use cars as their primary means of transport, whereas many more people utilize the efficient and mostly reliable public transportation in Lyon. One wonders whether Kansas Citians would be as likely to embrace a public bike system, which has been particularly successful in Lyon.

I contend that a carefully designed plan for stations and bicycles, as well as a persuasive introductory campaign, could make bikes a viable solution in Kansas City. Our program would have to be modeled after the

sentiment of a "simple and practical" solution for "short trips." A preliminary system in Kansas City would be most effective if based around the universities. This implies a population that is already in a pedestrian position. Were we to place a station at the new U Center at UMKC, at a central location at Rockhurst, and at a similar part of the Art Institute, students could greatly benefit from their accessibility and cost-effectiveness, especially in a future in which the costs of personal vehicles is less and less certain. It would make sense also to place stations at nearby points of interest. A hypothetical list would include the Plaza Library, Nelson-Atkins Art Museum, Westport, the Plaza, Mill Creek and Loose Parks, and perhaps along 39th Street West, near KU Med Center. The bikes could be used to navigate between any of these points. Situating the stations in this fashion would serve to further integrate the universities into the city, strengthening the institutional and social relationships between the two.

I addition, imagine the attraction of coming to Kansas City for the first time and being able to rent a bike to see all of these places .One can imagine the pleasant ride between the Nelson lawn and the fountains of the Plaza, or even the ease of enjoying the installed are at Mill Creek Park. Making Kansas City tourist nodes more interactive would undoubtedly heighten their appeal, while also spreading out tourist spending. In essence, we can provide access to the city that is both environmentally friendly and socially and economically conscious.

The expanded use of bicycles in Kansas City is a viable option to stave off our costly use of fossil fuels. In addition, other advantages would be the creation of bike maintenance jobs, the cultivation of a more active and healthy community, the thinning of automobile traffic, and a new recreational option for tourists and natives alike. A European public bicycle system is translatable into an American city like ours. We simply have to have the will and imagination to make it work.

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Bruce Copeland

E.S.C.R.O.W.
(Environmentally Sound Campus Renewing Our World)

E.S.C.R.O.W. is a holistic, methodological approach to begin change towards a sustainable campus, leading towards a sustainable city. E.S.C.R.O.W. focuses on an expansion of the UMKC Recycling program, the utilization of green and sustainable building practices for buildings on campus—along with green renovations of antiquated and inefficient buildings, and updating campus lighting to high-compact fluorescents,

PV powered outdoor lamps and widespread use of skylights and natural lighting. Also recommended is reduction of campus lawn care which leaves a large environmental footprint, replacement of carbon fuel official vehicles with alternative fuel campus vehicles, and the reduction of paper use in classrooms and in offices. Moreover, students would be encouraged to utilize locally grown and fair-trade foods, emphasizing also the composting of food waste to fertilize campus grounds, and encouraging clothing and furnishings recycling by students; unwanted items could be donated to community organizations.

David Scott Goth

Community-Wide Vinyl Billboard Recycling

Every year, Polyvinyl Chloride (PVC) billboard coverings are discarded into landfills where they create toxic pollution including lead, cadmium, phtalates and dioxins. If they are incinerated, they create hydrogen chloride gas that interacts with the atmosphere to create acid rain. The vinyl billboards are extremely durable, and are valuable resources currently being wasted. With a partnership with the UMKC Department of Art and Art History, these PVC coverings could be used to replace the expensive, stretched cotton canvases currently used by the department. The necessary equipment needed to turn PVC into canvases could be acquired through the local business community at a reasonably minimal initial investment. Moreover, other Schools and Departments at UMKC could be involved in locating resources for the "raw" material, whether from outdoor advertisers, large printers, local governments or even movie theatres. Eventually, PVC needs to be replaced by a more environmentally conscious alternative, but undertaking this step is a great beginning for physically removing toxins from landfills and laying down a foundation for future sustainability programs.

Chelsea Nicole Grigery

Maximization of the use of Time and Energy: Two Irreplaceable Resources

In certain academic plans, such as the BS/MD program, where large groups of students are share identical class schedules, UMKC

should work to structure the classes as to eliminate as much commuting time as possible. Eliminating the time between classes would motivate students to remain on campus instead of traveling. Furthermore, consolidating the required classes into a three day week would eliminate two extra days of commuting. Reduced fuel usage would decrease the amount of carbon dioxide emitted into the atmosphere for our region. This would be a step in addressing the global warming problem that impacts our world. The financial impacts of the savings from the reduced commuting requirements are also an important benefit. Although this does not directly impact environmental sustainability, it is important to the United States as it would decrease our country's dependency on foreign oil suppliers.

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James E. Galvin

The Essence of Sustainability is Adaptability

'Sustainable' is not a quality, it is a prediction. We observe that certain systems in nature are very, very old – savannahs, coral reefs, rainforests – and we infer that they must have some ability to sustain themselves throughout time. Our exploration of their sustainability has almost always lead us to notice that solar energy drives their whole systems, and that they place the highest premium on the retention and recirculation of nutrients. As a result, humanity today believes that we can achieve sustainability by switching to solar energy and by recycling. The impacts of solar power and recycling on the Earth's health today are obvious; that is, they are minimal if apparent at all. This would fit within our current, boundless economic system. The problem is that an infinite system is not sufficient to achieve true sustainability. Three principles are very important in determining a path to true sustainability: every entity has a responsibility to its habitat, and every element in the system is equally important, and the diversity of elements promotes stability. Observing these principles has both altruistic and self-serving results.

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Eric Salmon

Office of Sustainability

UMKC plays a very important role in the education of the Kansas City community. Therefore, if UMKC is to have the positive impact in our community that it is capable of, UMKC should establish an "Office of Sustainability". The purpose of the Office of Sustainability would be to

research, motivate, and involve students in the arena of environmental sustainability. It would accomplish this purpose in the following four areas: ideas, policies, classes, and networking.

Possible goals could include lowering vehicle dependency on campus. Various mechanisms could be implemented to do this, but the office could get people talking. Policies about construction work, transportation, and other environmentally relevant topics could be established to help regulate UMKC's ecological footprint. Classes could be offered that would educate the students about the dangers global warming pose to the environment. Lastly, networking with already established environmental organizations would allow the office to grow and make implementation of its policies more efficient.

Jessica Farmer

A Growing University: UMKC Community Gardens

A majority of people live in cities – a fact that is true in the United States and for the world as a whole. Urban sustainability will require new strategies for providing food that requires less fuel use. Luc Mougeot suggests that "[u]rban agriculture is one source of supply in urban food systems, one food security option, a tool for making productive use of urban spaces, treating/recovering urban solid and liquid wastes, saving or generating income, a source of employment, and a way to manage freshwater resources more effectively." A UMKC Community Garden could produce vegetables, herbs, and flowers, using organic methods. The garden could be placed on an unused plot of land owned by the university. Food produced on the plot would be a local food source for surrounding residents, as well as UMKC students, staff, and faculty. The produce could be distributed to the residents of the neighborhood through a Community Supported Agriculture program (CSA). Each subscriber to the program would receive a certain amount of fresh vegetables each week, which they would pay for in a monthly fee. Any profits made from the CSA program would be used to support the garden's operations. A UMKC Community Garden can be a model of urban agriculture, an educational tool, and also a way for the University to reach out to the surrounding community.