

# GREENSCENE

CREATING THE FUTURE FOR THE KANKAKEE RIVER VALLEY

Sponsored by Court Street Ford, Riverside Medical Center and Security Lumber Company.

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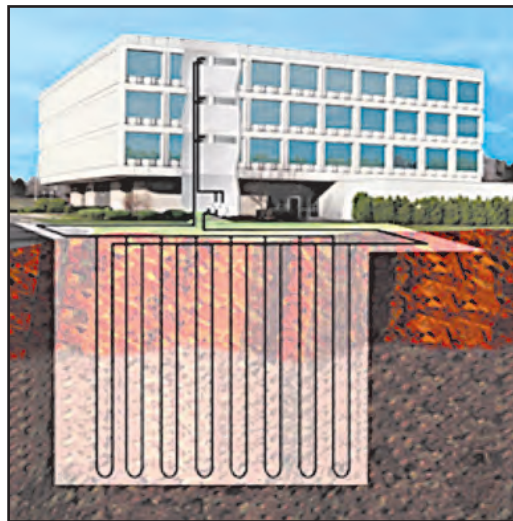
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## Building Energy Efficiency –

In the U.S., industry accounts for 25% of Carbon Dioxide emissions, transportation for 32% and buildings for 43%. These statistics show that any improvement in building energy efficiency will have the positive impact of reducing green house gas emissions as well as holding down utility costs. Home owners, businesses, school districts, units of government, hospitals, and industry should all consider building improvements directed at improved efficiency to control their energy costs. This issue of GreenScene presents information about some local building improvement projects which reduce operating costs by implementing energy efficiency measures.

## ONU's Geothermal System

Olivet Nazarene University is currently constructing a new \$35 million recreation center that will be utilizing the latest and most sophisticated "geothermal energy system" technology for its heating and cooling needs. Geothermal systems take advantage of the natural heat stored in the crust of the earth. In a real sense, these systems are "solar energy" systems because the energy of the sun keeps the ground temperature relatively constant. The year-round ground temperature below the frost line in this part of the country is about 54 degrees Fahrenheit. This temperature differential compared to the ambient air temperature can be used for both heating and cooling needs. The constant temperature below the ground reduces the amount of energy required to either raise or lower the building to the desired temperature. Heat pump technology is used to heat the building in the winter and cool it in the summer. In this design, a special fluid, usually water with anti-freeze added, is circulated through a network of pipes or tubing buried in the ground where heat is either absorbed or released. In the winter, heat is drawn out of the ground via the flowing liquid and sent to mammoth heat pumps and air handlers. Stored solar heat is being drawn from the earth. In the summer, the process is reversed and heat is drawn out of the building and dispersed back into the earth.



The building which is scheduled to open 12/12/12, will be approximately 120,000 square feet and will feature an eight lane 200 meter track, two swimming pools, climbing walls, four basketball courts, a workout facility, meeting areas, and classrooms. The energy needs of such a large facility will be great, but the geothermal system will eliminate the use of any natural gas for space and water heating and save at least \$80,000 a year in energy costs. To meet the large HVAC capacity needs of the building, Olivet has installed a vertical geothermal system. Eighty, 650 foot deep wells have been drilled in a field about the size of a football field, just north of the nursing building. Special 2 inch diameter plastic tubing is inserted into these wells with both intake and return branches. A special anti-freeze/water combination liquid will circulate down into the wells and will be synchronized by 4 large baffle systems buried under the ground surface of the field. The fluid will be pumped from the well field over to the building and returned through 2 larger tubes 8-10 inches in diameter. These main feeder tubes are buried several feet in the ground and run underneath the Weber Center parking lot for several hundred feet. The geothermal field was created by Indie Energy, a national leader in geothermal technology. For more information their website is: [http://indieenergy.com/case\\_studies/](http://indieenergy.com/case_studies/)

Olivet received some incentive money including a \$266,000 grant from ComEd, to assist with the project costs. But even without these funds, the payback is estimated to be 10 years or less.

One of great things about this energy structure is that after a spring and summer which saw the field area full of trenches and wholes, the system will be completely covered and returned to use as an intramural field for students as it has been for years. By next summer, there will be nothing to indicate that ONU students are playing flag football or Frisbee on top of a terrific, energy saving, "solar powered" geothermal field.

For a virtual tour of the new building go to: <http://www2.olivet.edu/studentlife/recreation/center/>

## Kankakee County Housing Authority Energy Performance Contracting / Building Energy Efficiency

In 2008, the Kankakee County Housing Authority contracted with Siemens Building Technologies to perform an energy audit on its Public Housing units (1 hundred-unit elderly/senior high-rise and 98 family site units).

The audit evaluated water, electric and gas use with an eye for potential savings. After the audit, it was predicted that the Housing Authority could save approximately \$200,000 annually in utility costs by implementing various improvements. The Housing Authority entered into an Energy Performance Contract with Siemens to complete the recommended work after authorization by HUD. Financing for the project was secured through a private loan (\$2,350,464.00) payable over 18 years. The money saved on utility costs resulting from the improvements is used to repay the loan.

The cost saving measures included new low flow and dual flush toilets, low flow aerators for all faucets in all the units, replacement of incandescent lighting fixtures with compact fluorescent ones, replacement of old furnaces with energy efficient furnaces, replacement of the boiler and heating units in the high-rise and weatherproofing and insulation in all family units (crawl spaces, attics).

Construction started February 2009 and was completed January 2010. All of the work associated with the upgrades was performed by local contractors and labor. Construction period savings on water, electric, and gas were guaranteed at \$98,022 – actual was \$183,359. The first full year of energy savings came in at \$232,828. The audit had predicted the first year savings at \$158,376, so a positive trend continues! With these better than expected energy savings, the payments on the 18 year loan are secure and there is some money left over to help with other facility improvements.

At the time KCHA entered into this HUD supported program to improve energy efficiency at facilities, it was one of only 5 of the 111 housing authorities in the state to do so. Because of the successes at these facilities, three more are now planning similar projects. The Kankakee County Housing Authority should be commended for its proactive approach to reducing its energy needs and improving the quality of life for its residents.

## FEATURED Business

### About Riverside HealthCare

Through its energy efficient building construction projects and environmentally friendly operating practices, Riverside HealthCare has demonstrated its commitment to environmental stewardship.

Riverside HealthCare is a fully integrated healthcare system serving the needs of patients throughout the counties of Kankakee, Iroquois, Will, Grundy and beyond. Riverside HealthCare is comprised of four entities:



Riverside Medical Center, located in Kankakee, Illinois, is a 336-bed hospital that provides a full scope of inpatient and outpatient care. Riverside also operates several community, primary and specialty health centers throughout the region. Riverside Medical Center was recently named one of the nation's 100 Top Hospitals, four years in a row, by Thomson Reuters, a leading provider of information and solutions to improve the cost and quality of health care. The hospital is also a Magnet® Credentialed Organization. The Magnet designation is one of the highest honors a hospital can earn with respect to the standard of nursing care provided. Earlier in the year, Riverside received recognition from HealthGrades as the #1 Spine Surgery program in Illinois. Riverside also received multiple HealthGrades Specialty Excellence Awards for orthopedic surgery, cardiac care, gastrointestinal and critical care.

Sojourn, a Riverside community, addresses the health care needs of the area's elderly population. The four facilities that are a part of Riverside Senior Living Center include: Butterfield Court, an assisted living facility, Miller Center, a skilled nursing facility and Westwood Oaks/Westwood Estates, independent retirement communities.

Oakside Corporation operates the Riverside Health Fitness Center and also coordinates community counseling programs, pharmacy, health equipment sales and leasing and home health care.

Riverside HealthCare Foundation raises funds for the health system for use in facility construction and repair, new equipment acquisition, community health care education initiatives and clinical research.

Acting as one, Riverside HealthCare brings to the region medical care that is unsurpassed by any other institution. To learn more about world-class healthcare, visit Riverside Medical Center on the web at [www.RiversideMC.net](http://www.RiversideMC.net).

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## Saving Energy is Holding Down Costs at KCC -

KCC has been tracking its annual energy costs and implementing various energy efficiency improvements over several years with the goal of reducing energy use and costs. By seeking better energy supplier contracts, implementing a four day summer work schedule, retrofitting lighting in campus buildings, and installing energy efficient upgrades to its antiquated HVAC system, KCC has achieved significant energy reductions and cost savings. FY 2011 energy costs were 18.9% lower than those for FY2010. The old gymnasium lights were replaced as part of the lighting retrofit project and the new system is about 74% more efficient while providing much better light quality. Two phases of a multi-phase renovation of the 30 plus year old HVAC system have been completed. The projects reduced electrical power demands by 700,758 Kwh and natural gas consumption by 18,758 therms which results in an estimated annual savings of \$88,650 per year. In addition, campus greenhouse gas emissions (in CO2 equivalents) are projected to be reduced by 515 metric tons as a result of these improvements. The significant capital expenditures needed to implement these upgrades were partially offset by grants and incentives from state and federal programs designed to encourage such improvements at public facilities. The combined total of incentives and grants awarded for the HVAC improvements to date is \$225,474. These same resources will be tapped to help with funding of planned additional HVAC renovations in coming years which will further improve heating and air conditioning energy efficiency on campus. The 50 Kw wind turbine erected on the KCC campus came on line in the spring of 2011 and all power generated is fed directly into the KCC power grid reducing the demand from the utility company for campus operations. The \$400,000 plus cost of this installation was supported by two grants as part of funding provided to establish the renewable energy training program at KCC.

## Green Roof is part of RMC's new project

Riverside Medical Center in Kankakee, Ill. recently unveiled a large, eco-friendly, vegetated green roof system which was installed as part of its new East Tower project. The installation demonstrates the hospital's commitment to environmental stewardship and provides patients, visitors and employees with an ever-changing landscape atop a rooftop space that was previously barren. "Riverside Medical Center is committed, not only to the best possible care of our patients, but to also help take care of the planet and reduce our carbon footprint," says Phillip M. Kambic, president and CEO of Riverside Medical Center. And, Kambic points out, that several research studies have indicated that a natural view can play an important role in improving health.

The system was designed and installed by Ambius, a division of Rentokil Initial plc, a provider of interior landscaping solutions. "This living roof encourages a different way of thinking altogether. Installing green roofs is about ensuring a commitment to address the most pressing environmental issues of our time — climate change, energy efficiency and sustainability," says Denise Eichmann, Ambius Project Development North America senior project manager. The planting system and vegetation on the living roof act as insulation and will reduce heating and cooling costs by as much as 20 percent. Green roofs have the ability to mitigate environmental extremes common to conventional roofs. When rain falls on a conventional roof, it sheets off and floods into storm drains - unabsorbed, unfiltered and undeterred. A living roof works the way a meadow does by absorbing water, filtering it, slowing it down and even storing some of it for later use. This ultimately helps reduce the threat of sewer overflows, extends the life of a city's drain system and returns cleaner water to the surrounding watershed.

The East Tower is the largest addition in the history of the hospital with 160,000-square-feet of new space. The space includes 12 newly designed, highly advanced operating rooms, seven richly appointed labor, delivery and recovery rooms, one dedicated C-section operating room, 18 new high-tech private ICU rooms, 23 family-centered, private rooms, and additional support space.

The new East Tower addition incorporates many green materials including low-VOC paint, recycled content flooring, renewable resource flooring, urea and formaldehyde-free adhesives, super-efficient, low-E glass, heat-resistant white TPO roofing, room occupancy sensors for reduced energy consumption and Energy Star rated appliances.

Riverside is also committed to other earth friendly initiatives which include:

Recycling -Riverside sends out 8 tons of cardboard, aluminum, plastic, toner cartridges etc. each month (avoiding landfill). Document Management -Riverside has invested in equipment and electronic medical record systems that allow physicians and staff to print less and scan more. Shredding - Riverside shreds and recycles 150,000 pounds of confidential paper each year. (avoiding landfill) Reusable Sharps Containers -The Daniels SharpSmart Reusable Sharps Containment Device provides a safer environment for staff and patients and reduces the waste stream of needles, syringes, and plastic by 6.5 tons annually.

## Career Corner

**Randy McGill, Executive Director  
Kankakee Co. Housing Authority  
Saving Green by Going Green**

After more than twenty years working in the private sector in various aspects of national and international distribution and sales of paper, janitorial, industrial and food service supplies, Randy McGill was hired as Acting Executive Director of the Kankakee Co. Housing Authority. This was to be a temporary assignment during a search by the KHA for a permanent director. The 90 day temporary assignment became permanent in May 2004 when he was selected for the job.

Since then, McGill has made major improvements to all aspects of the once beleaguered housing authority. Responsible for the turnaround of the troubled agency under HUD guidelines, he revised and updated policies, re-staffed the organization and implemented procedures to bring the Authority into Standard Performer Status. By working with the Office of the Inspector General, previous audit findings were cleared. Vital relationships were restored with the public and public entities such as City and County governments as well as Agency clients and landlords it serves. Budgets were balanced for all programs and an Asset Management System for Agency owned properties was implemented.

In 2007, seeking ways to make up for HUD funding shortages, Mr. McGill investigated various energy conservation measures and brought them to his board for consideration. After seeing the potential of Energy Performance Contracting, the KHA board solicited the services of an energy audit firm with the ability to initiate a performance contract. After authorization by HUD in 2008, the authority entered into a performance contract. The construction associated with the energy conservation measures identified by the energy audit firm began February 2009 and was completed January 2010. Details of this successful project are in the article on page one of this publication. Through the leadership of Mr. McGill, the Kankakee County Housing Authority has been able to implement significant energy efficiency and quality of life enhancements to its facilities and finance their cost with the savings in utility bills resulting from the improved equipment performance. Saving Green by Going Green ! Randy McGill grew up in Momence, has lived in the area most of his life, and is a 1979 graduate of Kankakee Community College.



## SUSTAINABILITY EDUCATION OPPORTUNITIES KANKAKEE COMMUNITY COLLEGE

### Credit courses – Spring Semester

- Environmental Biology – Biol 1584 (4 credit hours)
- Survey of Renewable Energy – ELTR 1223 (3 credit hours)
- Introduction to Solar – Photovoltaic Technology (4 credit hours)
- Plant Propagation – Hort 1023 – (3 credit hours)
- Plant Diseases & Insects – Hort 1133 – (3 credit hours)
- Landscape Layout & Design – Hort 1154 (4 credit hours)

**Spring Semester begins Jan. 9, 2012  
Contact an advisor at 815/802-8500 to enroll**

### Continuing Education classes

- Solar & Wind Market Overview – Sust-9008-Q13 (63244)
- Room D123 6:00 – 9:00 p.m. 12/20/11

**CONTACT KCC'S CONTINUING EDUCATION & CAREER SERVICES FOR MORE INFORMATION / REGISTRATION REGARDING THIS OFFERING – 815/802-8200**

### Programs Offered Through U of I Extension – Kankakee County

#### 2012 Master Gardener Classes

Fridays 9:00 a.m. – 2:30 p.m. from January 27 to March 30, 2012  
Space limited, contact the Extension to register

#### 2012 Sheep & Goat Workshop

Saturday, January 28 from 9:00 a.m. to 3:00 p.m.  
Call the Extension office to pre-register before January 25th

#### 2012 Vegetable Growers School

Wednesday, February 15, from 8:30 a.m. to 3:00 p.m.  
Call the Extension office for details

#### Beekeeping Workshop

Saturday, March 10, Schedule to be determined, call the Extension office for details

#### Meals for a Healthy Heart Workshop Series

A special cooking class presented by the Extension's Nutrition and Wellness Educator February 21 & 28, call Extension office for details

**THE KANKAKEE COUNTY EXTENSION OFFICE  
NUMBER IS 815.933.8337**

#### Living on the Land – Stewardship for Small Acreage

An 8 week series offered at the Will County Extension office  
From January 26 to March 29, 2012, 6:00 p.m. – 9:00 p.m.  
Call 815/727-9296 for more information

### Other Sustainability Related Activities in the Area

#### Midwest Permaculture, Stelle, Illinois

Go to [info@midwestpermaculture.com](mailto:info@midwestpermaculture.com) for scheduled programs.  
Contact Bill & Becky Wilson at 815/256-2215

#### Center for Sustainable Community, Stelle, Illinois

Go to [www.centerforcommunitysustainability.org](http://www.centerforcommunitysustainability.org) for information about planned events and programs.

## Green Byte:

**Tis' the season to be jolly, and Sustainable!**

**Have a Green – more Sustainable Holiday this year!  
Here are some websites that will help!**

#### Green Holidays

- [http://www.glrppr.org/docs/p2\\_for\\_the\\_holidays.htm](http://www.glrppr.org/docs/p2_for_the_holidays.htm)
- [http://eartheasy.com/give\\_sustainchristmas.htm](http://eartheasy.com/give_sustainchristmas.htm)
- <http://www.post-gazette.com/pg/08330/930457-51.stm>
- [http://greenliving.about.com/od/thegreenfamily/tp/green\\_christmas.htm](http://greenliving.about.com/od/thegreenfamily/tp/green_christmas.htm)
- <http://www.naturalmatters.net/article-view.asp?article=3855>

#### Green winter

- <http://www.epa.gov/epahome/hi-winter.htm>
- <http://schaumburglibrarygreenside.wordpress.com/2009/01/09/green-tips-for-the-winter/>
- <http://greenbuildingelements.com/2008/10/27/ten-tips-to-save-energy-this-winter/>

For additional information,

just GOOGLE Green Holidays and you'll get a lot more ideas!

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