



University of Oregon

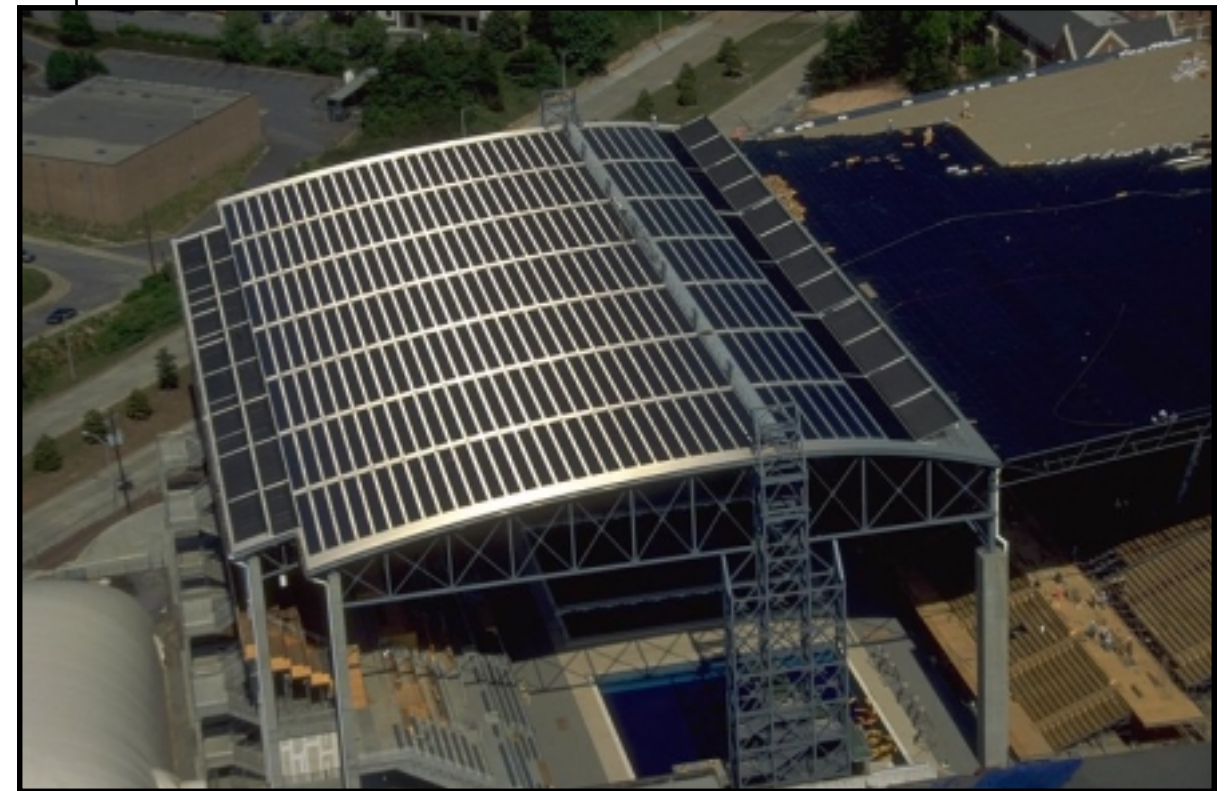
SOLAR INCIDENTS

The Newsletter of the Solar Information Center

Vol. 8 No. 1

FALL 1997

in this issue:
Photovoltaics in Puerto Rico
Rammed Earth
Design Showcase
Sustainable Solutions



Olympic Aquatic Center, Atlanta, GA

Advances in Photovoltaics

By Ross Leventhal

As the burning of fossil fuels continues to degrade our atmosphere, and the supply dwindles, we are being forced to consider alternative energy sources. Photovoltaic (PV) technology allows us to use the sun to generate electricity. High initial cost, lack of knowledge and concern over embodied energy for their production have been reasons cited to not utilize this technology. As mechanized production and higher demand lowers their cost, people have started to see the benefits of PV applications, especially in remote locations where it is now cheaper to use PV than it is to run utilities one quarter mile to a new building. Another problem has been the large area of panels needed to generate enough electricity for a typical household's consumption. The options of cluttering a yard or attaching extra hardware to a roof were unattractive to home owners and businesses. Advances in photovoltaic technology will offer more attractive choices to home owners and speed the transition to a renewable energy economy.



(continued on page 8)



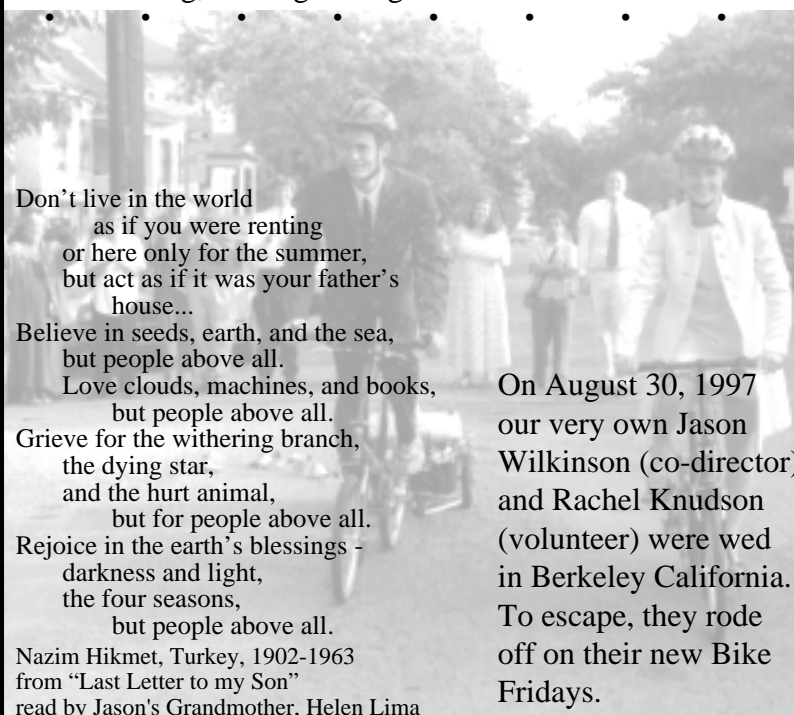
The Solar Page

What is the Solar Information Center?

It is a student run organization sponsored by the ASUO and EWEB. The purpose of the center is to serve as a research, education, and information center on solar energy and alternative energies, and their applications in architecture and technology.

One of its vital functions is to sponsor a lecture series on local, regional and global energy issues to promote a higher awareness toward conservation and renewable energy. The center also provides an in-house information source of books, periodicals, abstracts, proceedings, topic-files, product-files and a World Wide Web site.

This summer the Solar Information Center was involved in several public events. On June 21 we were out on the Downtown Eugene Mall for "Solar Fest", along with other solar groups, and there was a special guest appearance by the SUN. Special thanks to Gary B. at Real Goods for a great job. The Oregon Country Fair is always a favorite of ours to make new contacts and strengthen old. We had display boards, pamphlets, books from our library, and the ever popular solar doll house. September 7th, Jason with the bike display system was out for "Green Eugene" on the river. We joined other groups concerned with the future of our community, in discussions, information sharing, and organizing.



Don't live in the world
as if you were renting
or here only for the summer,
but act as if it was your father's
house...

Believe in seeds, earth, and the sea,
but people above all.

Love clouds, machines, and books,
but people above all.

Grieve for the withering branch,
the dying star,
and the hurt animal,
but for people above all.

Rejoice in the earth's blessings -
darkness and light,
the four seasons,
but people above all.

Nazim Hikmet, Turkey, 1902-1963
from "Last Letter to my Son"
read by Jason's Grandmother, Helen Lima

On August 30, 1997
our very own Jason
Wilkinson (co-director)
and Rachel Knudson
(volunteer) were wed
in Berkeley California.
To escape, they rode
off on their new Bike
Fridays.

SOLAR INFORMATION CENTER

219 Pacific Hall
University of Oregon
(541) 346-3696
e-mail: sic@aaa.uoregon.edu
http://darkwing.uoregon.edu/~sic/

Co-Directors
ROSS LEVENTHAL
JASON WILKINSON

Staff:
JOHN BOOSINGER
MARY BETH CHILDS
EMILY CRANE
KATE HARVEY
MARCUS KOCH
CHARLES LINK

Interns:
JUSTIN GRAHAM
SARAH EMERY

Volunteers:
SOHAIL ABRAHAMS
ARIENNE BUFFUM
CHRIS CHALMERS
NOAH FRIEDMAN
CHAD KIRKPATRICK
RACHEL KNUDSON
BILL NACHMAN
THERESE PEFFER
ADAM ROBBINS
RACHEL TALLMADGE
MAREN TOMBLIN
BEN WEBB

Advisors:
JOHN BALDWIN
G.Z. BROWN
VIRGINIA CARTWRIGHT
DAVID McDANIELS
JOHN REYNOLDS
CHARLES RUSCH
STEPHEN STILL
FRANK VIGNOLA

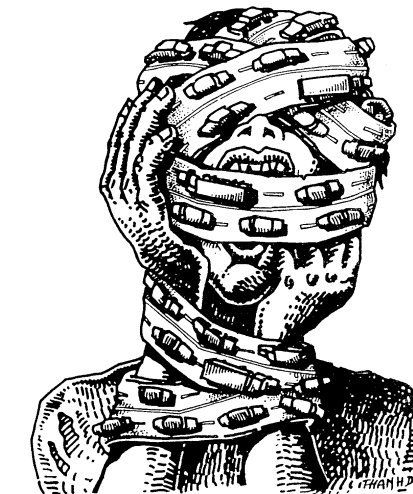
**SPECIAL THANKS
TO EWEB FOR
THEIR CONTINUED
SUPPORT!**

Traffic Reaches a Critical Mass Jason Wilkinson

What if when, you walked down a city street you didn't have to dodge cars? Or if you didn't have to inhale carbon monoxide on your stroll downtown? What if there were many more tree-lined walking and biking paths through our urban areas? For most city dwellers this would seem to be an unreachable goal, if it were even considered. The international movement known as Critical Mass is trying to present such alternatives as realistic and appropriate for our cities.

In various cities around the world including San Francisco, Sydney, London and Copenhagen, groups of cyclists gather once a month to take to the streets. This parade of bicycles makes its way along a usually undetermined route through the city center and outlying districts. Along the way, someone passes out information on the ills of automobiles, the superior efficiency of transportation alternatives and ideas on planning more livable cities. The Critical Mass riders come for different reasons: cleaner air, to take back the streets from cars, to show off their latest bicycle fashion, to meet new friends and allies, or to build community, but everyone is out to have a great time.

Critical Mass began in San Francisco, California in 1992, when a group of dedicated cyclists decided to ride home together from work.¹ Over the past five years this bicycle movement has grown dramatically and is seen by some as adding to commuting congestion. For this reason the Critical Mass rides in several cities have been met with attacks from local police and media, bringing this movement into the international spotlight. In response, many automobile commuters and city officials are beginning to ask some difficult questions about improving transportation systems in our cities.



The automobile in the United States has taken its citizens hostage. Traffic jams are snarling our roads and highways during commute hours in almost all urban areas. In larger cities, traffic problems are steady most of the day and night. Our cities, towns and suburbs are laid out to accommodate the automobile while the needs of the pedestrian have been largely neglected. An entire third of the US population has been stranded because they are too poor, too young, too old or physically not able to drive a car. These people are forced to rely on an automobile industry induced, meager public transportation system,² or other people/drivers for rides. Our cities are not walkable, and cause hardship financial and otherwise on poorer segments of the population. For example, women put two times the number of hours behind the wheel than the average driver.³ The oceans of parking lots that surround our malls and outlet stores only multiply our sense of placelessness. At Disneyland, thousands of people flock to the



Critical Mass Cities

- Australia:** Brisbane, Melbourne, Sydney
- Brazil:** Rio de Janeiro
- Canada:** Montreal, Ottawa, Toronto, Vancouver
- Denmark:** Aalborg, Aarhus, Copenhagen, Esbjerg, Svendborg
- England:** Birmingham, Cambridge, London, Nottingham
- Germany:** Berlin,
- The Netherlands:** Amsterdam
- Norway:** Bergen
- Poland:** Poznan,
- Spain:** Barcelona,
- Switzerland:** Zurich
- Tasmania:** Hobart
- United States:**
 - Arizona:** Flagstaff, Tuscon
 - California:** Arcata, Berkeley, Los Angles, Sacramento, San Francisco, San Luis Obispo, Santa Cruz
 - Georgia:** Atlanta, Athens,
 - Indiana:** Bloomington
 - Louisiana:** New Orleans
 - Maryland:** Annapolis
 - Massachusetts:** Boston,
 - Minnesota:** Minneapolis
 - Missouri:** Columbia,
 - Montana:** Missoula,
 - Nevada:** Reno
 - New Mexico:** Albuquerque
 - New York:** New York City,
 - Ohio:** Columbus, Cleveland, Toledo
 - Oregon:** Portland, Eugene
 - Pennsylvania:** Philadelphia, Pittsburgh
 - Texas:** Austin
 - Vermont:** Burlington,
 - Washington DC**
 - Washington:** Seattle
 - Wisconsin:** Madison,

(continued on page 4)



last of the "old town" main streets and marvel as they walk from shop to shop. Back in our urban centers the skies grow brown with air pollution, 90% of which is



caused by automobiles. Many of the affluent, during the 1950's, fled these city centers in their autos to the suburbs and more recently left those homes and moved to gated communities. What they have left behind is decayed, sprawling cities with extremely small tax bases unable to support even basic social services. The car has been the vehicle that has transported our divisions of classes and races to new levels. All of this for what? The "freedom" to drive?⁴

Critical Mass is a movement whose time has come and it is in direct conflict with the automobile paradigm. It is a leaderless movement of like-minded cyclists that are throwing a wrench into the already grinding gears of our transportation system. Critical Mass proposes bicycling as an alternative to the automobile centered life style. One of the original riders, Chris Carlsson, describes it as such:

"We conceived Critical Mass to be a new kind of political space, not about PROTESTING but about CELEBRATING our vision of preferable alternatives, most obviously in this case bicycling over the car culture. Importantly we wanted to build on the strong roots of humor, disdain for authority, decentralization, and self-direction that characterize our local political cultural history."

However this culture of opposition has its backlash. At times, choosing to join this movement is like choosing to go to war. The police who are sent out to observe, confront or control the riders often arrive in riot gear and have physically assaulted cyclists. (See side bar, next page) Some politicians are not understanding. After the June Critical Mass ride, San Francisco Mayor Willie Brown declared a crackdown. "I don't know how this city ever got to the point where it tolerates bicyclists breaking all the rules," Brown said at a press conference. "The ultimate arrogance is to say, 'I'm immune from any authority whatsoever.' . . . We are going to have to sit them down and deal with the issue."⁵ Unfortunately for Mayor Brown, like many city woes, its not going to be so easy. The leaderless Critical Mass movement does not make back room deals, and has vowed to continue their monthly (sometimes weekly) rides.

It is in Mayor Brown's statement that cyclists may see something gained as a result of the rides. Most likely, Mayor Brown's 'issue' is not alternative transportation but what he sees as a threat to order. However if advocates for cyclists have his attention then the opportunity for discussion presents itself. Riders may also take pride in the fact that some discussion has already begun. Following the June ride, a city planner issued a plan to close Market Street to car traffic in the heart of downtown - a plan which would benefit pedestrians as well. This plan also included licensing of cyclists and looking into bikes being permitted to proceed through red lights after stopping. In addition to this proposal, several Bay Area reporters for the mainstream media have covered the dangers of city cycling and the benefits of bicycle commuting.⁶

In Eugene, Oregon, the July Critical

During the July 25th Critical Mass ride in San Francisco, a police riot broke out which the main stream media has failed to cover. The following are excerpts from a web site (<http://www.e-media.com/cm/>). The images and accounts are a disturbing comment on the state of our city governments, and a testament to the current dangers of joining in a Critical Mass ride.

7:30 PM the night of July 25th Police Riot

Bennett Hall, a community activist credited by Downtown Magazine with helping clean up Union Square, was watching the bicyclists on Market Street with a friend in front of Nordstrom's. He reported observing a peaceful scene. A police officer stopped a female cyclist at random and began writing her a ticket and berating her though she had committed no offense. Hall, a professional photographer, had his camera with him and began taking pictures of this scene.

Hall was asked to stand on the curb. He did. As he continued shooting, the lens of his camera was struck and he was dragged into the street and pushed up against a squad car. Seconds later his arm was twisted behind his back and his camera taken. Another pedestrian succeeded in rescuing the camera from the police and threw it to the crowd with the instructions: "Get it to the Chronicle!" Eugene Hill, who picked up the camera was tackled, kicked, beaten with riot clubs, and pepper sprayed. At this point, police began assaulting cyclists and pedestrians.

Cyclists targeted for knock-down assaults were seemingly chosen at random. The attacks took place quickly and without warning and those attacked were rarely charged with anything.

Many cyclists, after being knocked down, were put in dangerous and painful holds... which are normally used only for violent prisoners. This amount of weight on a person's neck can easily cause a serious and potentially life threatening injury.



What is happening to San Francisco? What has happened to San Francisco that enables members of the San Francisco Police Department to feel free to assault innocent people in broad daylight in front of scores of witnesses?

Note: The night of the July 25th ride, reporters repeatedly called on Mayor Brown to comment on the night's unfolding events which they characterized as "mayhem" and "chaos." Mr. Brown commented that he had said what he'd had to say about cyclists in San Francisco and that was that.



Mass ride was ridiculed by the local media and police representatives. The 70 riders were accused of intentionally blocking and delaying an ambulance carrying a seriously injured boy on the Ferry Street Bridge. Fines were issued at Icky's Tea House by Eugene Police to people that officers said they "recognized" as part of Critical Mass, some of whom claimed not to have taken part in the ride. The city manager also blasted the riders saying, "Once people break the law and endanger the safety of others, as they did last Friday, then we are going to take a tough line on enforcement action."⁷ But Tim Lewis, who video taped the ride, said, "This is nothing more than an attempt to undermine the activism and the unity that has been growing and posing a danger to the government and police in this community."⁸ His footage on the Ferry Street Bridge shows the Critical Mass riders moving to the right when asked by police to do so. This evidence disproves the claims made by the E.P.D., the Register Guard, and the City Manager.

As citizens we have a duty to pursue various alternatives in our communities. Critical Mass is a form of civil disobedience

(continued on page 11)

continued from page 1

Types of Solar Cells

The three main types of PV cells being produced today are single-crystal, polycrystalline, and amorphous solar cells. While single-crystal solar cells use expensive and energy consuming semiconductor-grade silicon, polycrystalline and amorphous cells do not. Polycrystalline cells use a metallurgical-grade silicon, which is much cheaper. However, both single-crystal and polycrystalline cells use blocks of silicon which must be sliced into thin wafers to create the cells. This slicing creates much waste in the form of dust and is a slow, energy intensive process. There are many developing techniques that continue to be perfected. One example is ribbon growth, which involves growing the crystals in a ribbon, instead of a block. This eliminates steps and reduces waste.



Sunslates™ Solar Shingles

The most exciting PV development is in the refining of the production of amorphous silicon cells. The manufacturing process uses far less material than crystalline forms of solar cells and amorphous silicon can be applied as a thin film to a variety of materials. There is no longer a need for heavy and fragile glass casings for solar cells. Amorphous PV's have traditionally had an efficiency of 5-8% as opposed to crystalline panels 10-15%. However encouraging results of 11.1% efficiency have been shown in a thin film panel, produced by Siemens Solar Industries and used by National Renewable Energy Lab (NREL) in a larger array. The entire array has averaged 9% efficiency.

New Panels Permit Integration

The development of amorphous panels has led to architecturally integrated solar cells. The solar electric metal roofing being manufactured by Uni-Solar should enable any house with a properly oriented roof to generate electricity. Uni-Solar has also developed a solar electric shingle system that integrates into an asphalt shingled roof. Another company called Atlantis Energy Inc. has developed a product called Sunslates™ that come equipped with either crystalline or amorphous cells. Others incorporate PV panels into curtain wall elements and sunshades, enabling architectural integration, as well as the potential for didactic architecture that speaks to a business' environmental concerns.

The exciting result of these designs is that the solar panel now can replace a traditional building material, reducing one input in the construction process and replacing it with a pollution-free, electricity producing material. Now the solar panels can disappear into the architecture, becoming aesthetically and functionally integrated. Properly oriented buildings can now become independent power producers.

Electricity Producing Architecture

The largest roof-integrated array in the U.S. is the 342-kW PV system at the Olympic Aquatic Center in Atlanta which demonstrates how large scale buildings can serve as an excellent power generating facility. This \$5.4 million project was enabled by funding from



Solar Facades Electric

During the July 25th Critical Mass ride in San Francisco, a police riot broke out which the main stream media has failed to cover. The following are excerpts from a web site (<http://www.e-media.com/cm/>). The images and accounts are a disturbing comment on the state of our city governments, and a testament to the current dangers of joining in a Critical Mass ride.

7:30 PM the night of July 25th Police Riot

Bennett Hall, a community activist credited by Downtown Magazine with helping clean up Union Square, was watching the bicyclists on Market Street with a friend in front of Nordstrom's. He reported observing a peaceful scene. A police officer stopped a female cyclist at random and began writing her a ticket and berating her though she had committed no offense. Hall, a professional photographer, had his camera with him and began taking pictures of this scene.

Hall was asked to stand on the curb. He did. As he continued shooting, the lens of his camera was struck and he was dragged into the street and pushed up against a squad car. Seconds later his arm was twisted behind his back and his camera taken. Another pedestrian succeeded in rescuing the camera from the police and threw it to the crowd with the instructions: "Get it to the Chronicle!" Eugene Hill, who picked up the camera was tackled, kicked, beaten with riot clubs, and pepper sprayed. At this point, police began assaulting cyclists and pedestrians.

Cyclists targeted for knock-down assaults were seemingly chosen at random. The attacks took place quickly and without warning and those attacked were rarely charged with anything.

Many cyclists, after being knocked down, were put in dangerous and painful holds... which are normally used only for violent prisoners. This amount of weight on a person's neck (see photo at right) can easily cause a serious and potentially life threatening injury.



What is happening to San Francisco? What has happened to San Francisco that enables members of the San Francisco Police Department to feel free to assault innocent people in broad daylight in front of scores of witnesses?

Note: The night of the July 25th ride, reporters repeatedly called on Mayor Brown to comment on the night's unfolding events which they characterized as "mayhem" and "chaos." Mr. Brown commented that he had said what he'd had to say about cyclists in San Francisco and that was that.



Critical Mass in San Francisco

In Eugene, Oregon, the July Critical Mass ride was ridiculed by the local media and police representatives. The 70 riders were accused of intentionally blocking and delaying an ambulance on the Ferry Street Bridge. Fines were issued at Icky's Tea House by Eugene Police to people that officers said they "recognized" as part of Critical Mass, some of whom claimed not to have taken part in the ride. The city manager also blasted the riders saying, "Once people break the law and endanger the safety of others, as they did last Friday, then we are going to take a tough line on enforcement action."⁷ But Tim Lewis, who video-taped the ride, said, "This is nothing more than an attempt to undermine the activism and the unity that has been growing and posing a danger to the government and police in this community."⁸ His footage on the Ferry Street Bridge shows the Critical Mass riders moving to the right when asked by police to do so. This evidence disproves the claims made by the E.P.D., the Register Guard, and the City Manager.

(continued on page 11)

Types of Solar Cells

The three main types of PV cells being produced today are single-crystal, polycrystalline, and amorphous solar cells. While single-crystal solar cells use expensive and energy consuming semiconductor-grade silicon, polycrystalline and amorphous cells do not. Polycrystalline cells use a metallurgical-grade silicon, which is much cheaper. However, both single-crystal and polycrystalline cells use blocks of silicon which must be sliced into thin wafers to create the cells. This slicing creates much waste in the form of dust and is a slow, energy intensive process. There are many developing techniques that continue to be perfected. One example is ribbon growth, which involves growing the crystals in a ribbon, instead of a block. This eliminates steps and reduces waste.

The most exciting PV development is in the refining of the production of amorphous silicon cells. The manufacturing process uses far less material than crystalline forms of solar cells and amorphous silicon can be applied as a thin film to a variety of materials. There is no longer a need for heavy and fragile glass casings for solar cells. Amorphous PV's have traditionally had an efficiency of 5-8% as opposed to Crystalline panels 10-15%. However encouraging results of 11.1% efficiency have been shown in a thin film panel, produced by Siemens Solar Industries and used by National Renewable Energy Lab (NREL) in a larger array. The entire array has averaged 9% efficiency.



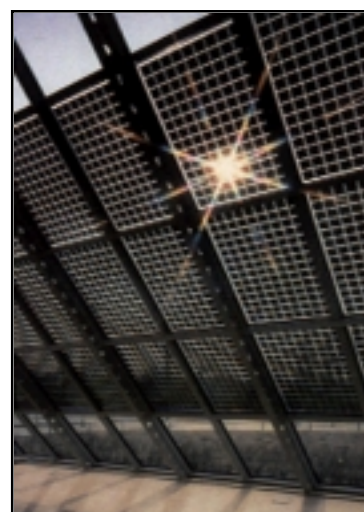
New Panels Permit Integration

The development of amorphous panels has led to architecturally integrated solar cells. The solar electric metal roofing being manufactured by Uni-Solar should enable any house with a properly oriented roof to generate electricity. Uni-Solar has also developed a solar electric shingle system that integrates into an asphalt shingled roof. Another company called Atlantis Energy Inc. has developed a product called Sunslates™ that come equipped with either crystalline or amorphous cells. Others incorporate PV panels into curtain wall elements and sunshades, enabling architectural integration, as well as the potential for didactic architecture that speaks to a business' environmental concerns.

The exciting result of these designs is that the solar panel now can replace a traditional building material, reducing one input in the construction process and replacing it with a pollution-free, electricity producing material. Now the solar panels can disappear into the architecture, becoming aesthetically and functionally integrated. Properly oriented buildings can now become independent power producers.

Electricity Producing Architecture

The largest roof-integrated array in the U.S. is the 342-kW PV system at the Olympic Aquatic Center in Atlanta which demonstrates how large scale buildings can serve as an excellent power generating facility. This \$5.4 million project was enabled by



funding from the Department of Energy (DOE) and the hard work of the people at the University Center of Excellence for Photovoltaic Research and Education (UCEPRE) at Georgia Tech.

The largest solar power rooftop project in the world is being installed by Siemens Solar on the new Munich Trade Fair Center. The one million watt solar array consists of over 7,800 solar modules and will generate over 1 million kWh annually, displacing 1000 tons of CO² emissions from coal burning power generation.

Grid Connected PV and Utilities

Being connected to the power grid gives a PV user the advantage of not having to have a bank of costly batteries for electricity storage. When a PV integrated roof is over-producing, the surplus is put into the grid and the owner receives revenue for the production. The implications of this type of arrangement projects a future in which new roofs could become solar power plants, and we would be able to reduce burning fossil fuels during daylight hours. This is especially relevant in hot and sunny climates, in which peak demand can occur in the midday of summer when cooling loads are straining the utilities and PV production would be very high. The other advantage of this arrangement is the reduction in need for new transmission lines, as distributed electricity generation would enable power to be used closer to its source. A test project is underway, sponsored by Sacramento Municipal Utility District (SMUD) in which 1500 homes have recently been outfitted with rooftop PVs, decreasing SMUD's need to build more generating and transmission facilities.

Present Value vs. True Cost

The days of only being able to rationalize PV use if a site is more than a quarter mile from transmission lines are hopefully over. As we become more aware of the ongoing destruction of our planet due to



nuclear power, fossil fuels, and hydroelectric generation a widespread shift should occur to the use of the abundant free resource of the sun. Of course if the subsidized forms of power generation were to be taxed for the negative results of nonrenewable energy production and consumption, such as the health problems caused by radiation and smog, PV would be a more cost effective solution. Since our economy is highly dependent on these resources, we know that profit hungry corporations would fight very hard to prevent true cost pricing on energy consumption. This is why developments in PV technology are so important. Increasing the benefits provided by PV electricity generation will ultimately convert more users to the SUN!

Resources

- UCEPRE: <http://www.ece.gatech.edu/users/2648/>
- Solarex : <http://www.solarex.com>
- Siemens Solar Industries: <http://www.solarpv.com>
- Strong, Steven J. *The Solar Electric House*
- Komp, Richard. *Practical Photovoltaics*. 1995. Aatec Publications, Ann Arbor, MI.
- Various Manufacturers' brochures, available on file at the Solar Information Center.

Thank you to the AAA Student Travel Fund for partially funding my travels to the American Solar Energy Society annual conference, in which many of the product brochures were retrieved, and new products were on display. This trip served as the motivation for this article.



SOLAR INFORMATION CENTER Spring Lecture Series & Events Calendar

These events are free and open to the public

1997 Solar Homes Tour

October 18 , 1:00 - 5:00 PM, **Within the City of Eugene, Oregon**

The 1997 Solar Homes Tour for Eugene, Oregon will exhibit 5 homes displaying a variety of earth friendly design and construction. The tour will cover a wide range of topics from passive solar design to straw bale construction. A \$10 ticket will admit one carload or 5 bicyclists. Information and tickets available from the S.I.C. Sponsored by The Solar Energy Association of Oregon & The American Solar Energy Society.

“Diet For a New America - Your Health, Your Planet” - Video Brown Bag with Jan Spencer of EarthSave

October 22 , 12:00 - 1:00 PM, **Lawrence Hall room 206**

A 30 minute video summarizing the book by Jon Robbins, hosts a journey into the great American food machine and reveals the tremendous environmental and health consequences of a diet based on animal products. Discussion to follow with Jan Spencer, a local Earth Save healthy food activist.

Global Warming - Climate Change

with Rhys Roth , Director of Atmosphere Alliance

October 27 , 7:00 - 9:30 PM , **Lawrence Hall room 177**

Rhys is the director of the Atmosphere Alliance, a project of the Earth Island Institute based in Olympia, Washington, that works to raise awareness and build solutions to global warming in the Pacific Northwest. The Atmosphere Alliance is advocating for the US the phase out of fossil fuels in ten years turning entirely to renewable energy sources.

The President's Million Solar Roof Initiative - Interactive Video Conference

Wednesday October 29. 11:00-12:30 **Studio A, IMC Knight Library**

Join us for a live teleconference broadcast from Washington D.C. Professionals around the country will participate to learn how the President's Solar Roof Initiative plans to spur the growth of solar and energy efficient products.

Doing a Few Things Right - Caring about Resources

with Jim Nielson , Utah Department of Natural Resource Builders

November 6 , 7:00 - 9:30 , **Lawrence Hall room 177**

As a case study, Jim will present one of his projects, the New Utah Department of Natural Resources Office Building. This design includes sensible efficiencies, within a tight budget, that reduce lighting , heating , and cooling costs by approximately half those of a typical office building.

Sustainable Business Symposium - Conference at the University of Oregon

November 10 - 12, **University of Oregon**

This first annual conference was established to explore, learn and implement practical and sustainable business practices. The keynote speakers are Paul Hawken, Fred Hansen, and David Gottfried. The S.I.C. will host the Green Building panel (Wednesday 7:00 - 9:00 PM).

Polly Cooper and Ken Haggard

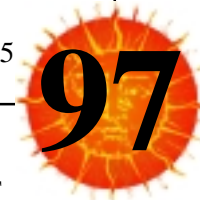
November 20, 7:00 - 9:30 , **Lawrence Hall room 177**

These two Central California architects will discuss the evolution of a practice that concentrated on passive solar building design for 15 years and has evolved to sustainable design for the last five years. They will also present history and theories of the sustainability movement.

For more information, please contact us at 541-346-3696.

Traffic Reaches a Critical Mass

continued from page 5



that has proved itself successful as a way to get transportation issues brought forth. Most people involved are not looking for violent confrontation. However, it would seem that to some degree our local governments are willing to ignore human and civil rights when dealing with important city-wide issues. To become a sustainable society we must learn to peacefully discuss alternatives, and respect those individuals who brought them to our attention.

1997, Page A-1: "CITY HALL TAKES AIM AT CRITICAL MASS"

7. Paul Neville, "City cites cyclists involved in protest", The Register-Guard, Friday, August 1, 1997.

8. Ibid.

The Eugene Critical Mass meets the last Friday of every month in the downtown mall. The next ride will take place on October 31, Halloween, beginning at 8th and Oak. Please come in costume.

1. See the Critical Mass Times website:
2. "In 1932, General Motors, the manufacturer of buses and owner of the largest share of Greyhound, formed a consortium of tire, oil, and highway men to buy and shut down America's streetcar systems." Jane Holtz Kay, *Asphalt Nation*, Crown Publishers, Inc., 1997
3. Jane Holtz Kay, *Asphalt Nation*, Crown Publishers, Inc., 1997, page 22
4. Arguments made by Jane Holtz Kay in, *Asphalt Nation*, Crown Publishers, Inc., 1997.
5. San Francisco Chronicle, July 2, 1997 - Mayor Willie Brown quote.
6. Rachel Gordon, Chuck Finnie and Anastasia Hendrix, San Francisco Examiner, Tuesday, July 29,



**Important: if you want to keep getting *Solar Incidents*
Please Send in this REPLY CARD.**

Due to limited funding we are updating our mailing list.

(Note: your address should be on the back of this card, if not please include it there.)

Please keep sending *Solar Incidents*!

Please take us off the mailing list.

Donations are always welcome, make checks out to Solar Information Center. Thanks for your support.

How are you enjoying our service?

Comments on our newsletter, website, lecture series, and in-house library are greatly appreciated.

CALENDAR

“The Politics of Eugene Water & Electric Board and Renewables”
 by Jeffrey F. Osanka
 Wednesday, February 12
 12:00 - 1:00 pm room 206 Lawrence Hall

“Landscapes for Ecological Living: An Introduction to Permaculture”
 by Jude Hobbs
 Thursday, February 13
 7:30 pm, room 177 Lawrence Hall

“Overview of EWEB’s Resource Development Program”
 by Ken Beeson
 Thursday, February 20
 7:30 pm, room 177 Lawrence Hall

“Forest Conservation Perspectives”
 by Gary Kutcher
 Wednesday, February 26
 12:00 - 1:00 pm room 206 Lawrence Hall

S	M	TU	W	TH	F	S
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23 Brown Bag	24	25	26
27	28	29	30	MAY	2	3

Brown Bag

SOLAR INFORMATION CENTER

(541) 346-3696 e-mail: sic@aaa.uoregon.edu website: <http://darkwing.uoregon.edu/~sic/>

219 PACIFIC HALL, U OF O

Office Hours: 9-5 M-F or by appointment

NON-PROFIT
 ORGANIZATION
 US POSTAGE
 PAID
 EUGENE, OR
 PERMIT No. 63

University of Oregon
 Solar Information Center
 Dept. of Architecture
 5236-University of Oregon
 Eugene, OR 97403-5236