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Good, Green, Safe Jobs: The Los Angeles Green Retrofit and Workforce Program¹

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Los Angeles Green Building Retrofit Ordinance

On April 8, 2009, the Los Angeles City Council unanimously passed an ordinance to the Los Angeles Administrative Code establishing the Green Retrofit and Workforce Program.² The Ordinance will lead to green retrofits of more than 1,000 city buildings and a workforce development policy that creates career pathways into good, green, safe jobs, targeting those in low-income neighborhoods.

The result of a two-year campaign, the Ordinance was developed by the Los Angeles Apollo Alliance, convened by Strategic Concepts in Organizing and Policy Education (SCOPE) in 2006 and comprised of more than 25 local community, labor and environmental organizations within the city of Los Angeles. The Los Angeles Apollo Alliance put forth the Green Jobs Ordinance in an effort to locally meet environmental and economic development goals set out by the *New Apollo Program*, a national program intended to increase the clean energy economy and decrease energy bills for families and business.³

Nationwide, buildings account for almost three-quarters of electricity consumed and over a third of overall energy use. They contribute an estimated 38% of carbon dioxide emissions, leaving a large carbon footprint in urban areas.⁴ Locally, the Ordinance is in line with Mayor Antonio Villaraigosa's 2007 Green LA Climate Action Plan designed to reduce carbon dioxide and other greenhouse gas emissions in Los Angeles to 35 percent below their 1990 levels by 2030.

¹ This Brief is based on a working paper presented at City Hall on June 11, 2009. A larger report will be issued in August in conjunction with a conference held by the UCLA-Labor Occupational Safety and Health Program, the Labor Center, the Institute for Research on Labor and Employment, the Los Angeles Apollo Alliance, and the Department of Urban Planning at UCLA.

² All information about the specific details of the retrofit Ordinance is drawn from: Delgadillo, R. J. (March 31, 2009). *Report Re: Draft Ordinance Establishing The Green Retrofit and Workforce Program, Green Retrofit Development Interdepartmental Task Force, and Green Retrofit Development Advisory Council. Report No. R09-0111.* Los Angeles, CA: Office of the City Attorney.

³ Los Angeles Apollo Alliance. (April 7, 2009). Press Release: *Los Angeles Adopts Landmark Green Jobs Ordinance First-in-the-nation plan to address staggering local unemployment, cut CO2 emissions, and revitalize inner city.*³

⁴ United States Green Building Council. "Green Building Research."
<http://www.usgbc.org/DisplayPage.aspx?cmspageID=1718>

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The Institute also sponsors colloquia, conferences and other public programming, is home to the undergraduate minor in Labor and Workplace Studies at UCLA, and carries out educational outreach on workplace issues to constituencies outside the university.

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The Ordinance applies to city-owned buildings over 7,500 square feet and built before 1978. Like previous initiatives in Los Angeles and elsewhere, LEED-EB certification (at the silver level) is a goal of the retrofits.⁵ Unique to Los Angeles and to this Ordinance are added goals that emphasize a comprehensive approach encompassing the creation of union jobs, community economic development in areas of high poverty and unemployment, and improvements to the health and safety of workers and the community.

Critical to maintaining the ongoing input of stakeholders which shaped the ordinance is the creation of a nine-member Green Retrofit Development Advisory Council. Members will represent labor, environmental, community, environmental justice, workforce development and philanthropic organizations as well as academia and green building professions. They will provide advice and recommendations to the Program Director, a new position, and to a City Interdepartmental task force to ensure the implementation meets the stated goals of the Ordinance.

This brief describes the Ordinance goals, outlines recommendations for its implementation put forth by the UCLA Community Scholars program and highlights the importance of labor and community involvement throughout the public policy process.

Goals of the Ordinance's Green Retrofit and Workforce Program

The Ordinance represents the first time that a program designed to retrofit buildings for energy efficiency and provide significant savings in municipal energy costs has been combined with training for green jobs, the creation of quality union jobs and the provision of pathways out of poverty for residents in low-income neighborhoods.⁶ If implemented successfully, Los Angeles will emerge as a leader in the development of innovative policies addressing both the current environmental and economic crises.

Economic, environmental and health-related goals of the ordinance are framed within a social justice context that prioritizes green building retrofit work and job creation for local residents in areas with high levels of poverty and unemployment. Greater energy efficiency – generating cost savings and reducing green house gas emissions – will be achieved by improving heating, ventilating and air conditioning systems; conserving scarce water resources; replacing inefficient lighting and energy consuming appliances and other retrofits. Solar, geothermal and other renewable energy systems will generate power and replace the need for energy from coal-fired plants, leading to reductions in green house gas emissions.

Projects to improve energy efficiency have the potential to create jobs and, more importantly, a career. The workforce program created by the Ordinance will build on Project Labor

⁵ LEED-EB stands for Leadership in Energy and Environmental Design – Existing Building and uses the rating system created by the United States Green Building Council. This rating system is nationally accepted as the standard for the design, construction, and operation of high performance green buildings.

⁶ Schneider, K. (April 9, 2009). *LA Apollo Helps City Adopt Landmark Green Jobs Ordinance*. Apollo News Service.

Agreements⁷ formerly negotiated with the Building Trades and on a previous jobs program to recruit local residents designed by the City and the City Coalition of Unions and its service and building trades members.

Finally, the projects will improve the health and safety of building workers and users by improving ventilation and indoor air quality and using sustainable products. The Ordinance also prioritizes retrofits to buildings that pose substantial health and safety issues.

Thus, implementation of the ordinance will address three key areas:

- The Economy – through cost savings and job creation
- The Environment – through a reduction in green house gas emissions
- Worker and community health – through improvements to air quality and use of safer products

The social justice goals of the LA Apollo Alliance are integrated into the Ordinance through language prioritizing buildings that are located in areas with high levels of poverty and unemployment, provide direct services for city residents and pose substantial health and safety issues. Fifty percent of the buildings retrofitted during the first five years of the program must come from poor areas of the City.

Within the context of multiple goals, the need to retrofit a large number of buildings and the availability of limited resources, the question becomes – which buildings and which retrofit elements should be prioritized?

UCLA Community Scholars Program

The 2009 Community Scholars program is a multidisciplinary initiative of the Department of Urban Planning, Center for Labor Research and Education, Labor Occupational Safety and Health Program (LOSH) and the Institute for Research on Labor and Employment (IRLE) at the University of California, Los Angeles. The program, sponsored by UCLA since 1992, is a two-quarter course which brings together labor and community leaders with graduate students to address key policy issues in Los Angeles. The 2009 course, entitled “Green Collar Jobs, Green Buildings & Social Justice: Pathway to a Sustainable City”, addressed the implementation of the new Green Building Retrofit Ordinance. Participants included UCLA graduate students from the departments of Urban Planning, Public Policy, Community Health Sciences and Mechanical Engineering, and representatives from the building trades, service sector unions and environmental and social justice organizations in Los Angeles.⁸

⁷ “Construction Careers for our Communities,” Report of 2007-2008 Community Scholars Class.

<http://www.labor.ucla.edu/programs/pdfs/ConstructionCareersForOurCommunitiesFullReport.pdf>

⁸ Scholars represented the following institutions: AFSCME Council 36; Bresee Foundation; Bricklayers Local 4; California Conservation Corps; Community Centers, Inc., Downtown Film Festival; East Yard Communities for Environmental Justice; Goodwill Southern California; IBEW Local 11; Iron Workers Local 433; Laborers-Employers Cooperation and Education Trust (LECET); Latino Issues Forum; Legal Aid Foundation of Los Angeles; Painters and

Winter quarter research created a framework outlining the importance of preventing climate change to Los Angeles, the landscape of workforce development programs, the need to integrate worker health with environmental initiatives and the importance of educating and involving workers and the community with the goal of creating a movement. Spring quarter research focused on specific steps to implement the ordinance to successfully meet its environmental, economic and health-related goals within a social justice context. This brief highlights the results of Spring quarter research, presented as a Working Paper at a City Hall briefing for policy makers, labor and community leaders on June 11, 2009.⁹

Roadmap to Retrofits

The Community Scholars created a “roadmap” intended to aid the Green Retrofit and Workforce Program Director and the City Departments in implementing the Ordinance so as to accomplish its multi-faceted objectives. To produce this roadmap, Community Scholars research teams made site visits, reviewed documents and interviewed key stakeholders. In particular, they conducted a case study of one of the buildings slated for retrofitting, the Vernon Branch Library, a building prioritized for its location in an area of high unemployment and for provision of public services located in South Los Angeles. Community Scholars audited the Library for its energy use, applied the LEED^R-EB checklist to the building and interviewed the staff and library users. This case study, together with a review of existing literature and in-depth interviews, served as the basis for the roadmap recommendations.

1. Prioritizing Buildings for Retrofits

One of the main goals of the Ordinance is to prioritize retrofits of buildings located in disinvested areas of the City. A Community Scholars research team developed a Building Selection Tool that filters and scores buildings based on basic building data and social criteria laid out in the Ordinance.

The Ordinance applies to buildings that are City-owned, over 7,500 square feet and built before 1978. It prioritizes retrofits for buildings:

- In areas of high poverty and unemployment relative to other areas of the City
- That pose substantial health and safety risks
- That provide direct services or facilities for city residents

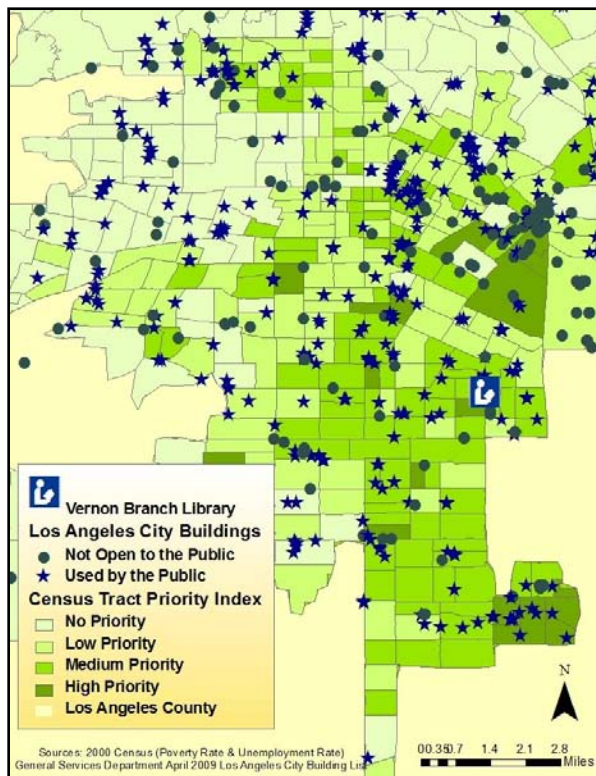
Allied Trades District Council 36; Pipe Trust Fund and SoCal Pipe Trades Union; Strategic Actions for a Just Economy (SAJE); Strategic Concepts in Organizing and Policy Education (SCOPE).

⁹ A final report integrating research from both quarters will be presented at a community conference August 5, 2009. All information in this brief is drawn from: UCLA Community Scholars (June, 2009). *Roadmap to Retrofits: The Los Angeles Green Retrofit & Workforce Program*. Working Paper.

A Community Scholars research team combined the list of city-owned buildings from the City with poverty and income level data from the Census to generate a prioritized list of buildings that would meet the public use and socioeconomic criteria above.¹⁰ Each building obtained a score from one to four based on this criteria, with the highest score identifying public use buildings in areas of high poverty and unemployment.

Using Geographic Information Systems software (GIS), students generated a map to visually demonstrate the prioritization schema; Figure 1 illustrates the results for South Los Angeles. The map depicts high areas of poverty and unemployment in dark green. City buildings are overlaid on the map, with public use buildings designated by a star. Buildings posing “substantial health and safety issues” will be identified during the audit phase and that criterion will be used to further sort the priority list of buildings.

Figure 1. Poverty & Unemployment Rate Index – Close-up of South Los Angeles.



2. Building Audits

Guidance and tools to conduct audits and retrofits exist in abundance. They range from EPA’s Energy Star rating system to LEED^R-EB certification tools to advice from numerous consulting groups. The challenge for the City and the Advisory Council is to identify those tools that will assist in meeting the overarching goals of the Ordinance in an efficient and effective manner.

¹⁰ Identifying data to operationalize the health and safety criteria was not feasible within the time constraints of the course.

Community Scholars research teams embarked on a review of tools, interviewed numerous energy and environmental professionals with green building expertise and conducted a sample audit of the Vernon Public Library. The teams then compared and contrasted the various approaches to craft recommendations for the roadmap to implementation. To best determine which retrofit elements to address first, the Community Scholars recommend conducting energy audits and retrocommissioning as well as a LEED^R-EB GAP Analysis.¹¹ The following outlines the suggested steps the City take for the Building Audit process using a mix of tools:

- 1) Using utility data and the online EPA ENERGY STAR Rating tool, obtain an ENERGY STAR score for each building. Use the score to sort and prioritize the list of buildings a second time.
- 2) Conduct a walk through audit to gather energy and water consumption data while conducting necessary testing and monitoring to prepare for retrocommissioning work. Use this information to produce a set of recommendations for energy, water, renewable energy and mechanical systems retrofits.
- 3) Lastly, once the recommendations from the previous step are prioritized and the work has begun, conduct a second building walk through using the LEED^R-EB checklist to determine how close the building is to achieving LEED^R-EB Silver certification.

3. Prioritizing Retrofit Improvements

The Green Retrofit and Workforce Program is intended to make buildings more energy efficient conserve natural resources, reduce greenhouse gas emissions, create jobs and improve health and safety conditions. While LEED^R-EB provides a comprehensive framework for building retrofits, it does not address job creation or the safety conditions of workers doing the retrofit work. LA Apollo Alliance members recognized the potential to meet LEED certification without meeting the goals of the Ordinance and incorporated thirteen specific retrofit elements that must be considered into the Ordinance language¹².

Community Scholars research teams reviewed the Ordinance language and the LEED checklist and created a matrix for use as a guide to prioritize retrofit changes. Information provided by the retrocommissioning and energy audit process is entered into the Green Retrofit Planning Matrix to highlight the project elements with the greatest benefit for cost-savings and energy efficiency; estimates of job creation and worker health and safety benefits are also included. Each retrofit element in the matrix is categorized according to its potential to create direct or indirect benefits:

¹¹ A LEED^R-EB GAP Analysis evaluates a building based on the LEED checklist for Existing Buildings Operations and Maintenance (EBOM). Categories include sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality and innovation and design process.

¹² Water efficient landscaping and irrigation; HVAC systems; Mechanical systems; Water conservation systems; Refrigeration systems; Retrofitting lighting and electrical systems; Retrofitting all energy consuming elements; Improving indoor air quality; Sustainable carpet; Sustainable maintenance; Titanium dioxide (TiO₂) windows treatments; Solar, geothermal and other renewable energy systems; Cool roofs

- **Potential for Cost Savings** – Does the retrofit element have the potential to create cost-savings for the City? Direct cost savings can be directly tied to the retrofit. Indirect savings are savings are related to, but not directly caused by the retrofit project.
- **Potential for Green Job Creation** – Are job creation benefits derived from retrofit projects that have the potential to increase labor hours of City workers or of workers contracted by the City? Indirect job creation benefits could have a ripple effect, with the potential to create jobs outside the immediate parameters of the Ordinance.
- **Potential for Greenhouse Gas (GHG) Emissions Reduction** – Does the retrofit element have the potential to reduce the carbon and GHG footprint of the City building and contribute towards City-wide GHG reduction goals? Direct reductions occur within the City’s portfolio. Indirect reductions are enabled through the City’s efforts but are realized outside the City’s boundary.
- **Potential for Occupant Health and Safety Benefits** – Does the retrofit element have potential to create occupant or worker health and safety benefits? These are created primarily through improved indoor air quality, increased occupant comfort and the use of less toxic products. Conversely, retrofitting and maintaining green buildings may pose hazards – if, for example, asbestos-containing materials must be disturbed. Planning for retrofits should include a job hazard analysis to identify potential hazards, and the need for training and protective equipment.¹³

¹³ An Injury & Illness Prevention Program is required by Cal/OSHA and should be adapted as needed to address potential hazards of retrofit and operations and maintenance work.

The Green Retrofit Planning Matrix shown in Figure 2 includes examples of retrofit elements contained in the Ordinance, categorized according to their potential to create direct or indirect benefits as described above.

Figure 2. Green Retrofit Planning Matrix.

Retrofit Element	Economic Benefits		Environmental Benefits	Health Benefits	Relation to LEED ^R -EBOM Categories
	Potential Cost Savings	Potential Job Creation	Potential Greenhouse Gas Emissions Reduction	Potential Health & Safety Benefits	
Water efficient landscaping & irrigation	Green	Green	Yellow	Red	Water Efficiency
HVAC system upgrades	Green	Green	Green	Green	Energy Efficiency, Indoor Environmental Quality
Mechanical systems	Yellow	Yellow	Yellow	Green	Energy & Atmosphere
Water conservation systems	Green	Green	Yellow	Red	Water Efficiency
Refrigeration systems	Green	Green	Green	Red	Energy & Atmosphere
Retrofitting lighting and electrical systems	Green	Green	Green	Red	Energy & Atmosphere
Retrofitting all energy consuming elements	Green	Yellow	Green	Red	Energy & Atmosphere
Improving indoor air quality	Yellow	Yellow	Red	Green	Indoor Environmental Quality
Sustainable carpet	Yellow	Green	Red	Green	Materials & Resources, Indoor Environmental Quality
Sustainable maintenance	Yellow	Yellow	Red	Green	Materials & Resources, Indoor Environmental Quality
Titanium dioxide (TiO ₂) window treatments	Green	Green	Green	Yellow	Energy & Atmosphere, Indoor Environmental Quality
Solar, geothermal & other renewable energy systems	Green	Green	Green	Red	Energy & Atmosphere
Cool roofs	Green	Green	Green	Red	Sustainable Sites

Note. Green = Direct Potential, Yellow = Indirect Potential, Red = No Potential

Challenges and Opportunities for the Green Retrofit and Workforce Development Program

The Green Retrofit Workforce Development Program is unique in that it brings together organized labor, the community and city government in order to improve the economy, the environment and health and safety. This confluence of often disparate parties is evident in the Ordinance's origins at the LA Apollo Alliance to the recommendations of the Community Scholars Program (which by its design includes labor and community leaders), to the governance structure established by the Ordinance language.

A method for selecting buildings to work on and a way to prioritize retrofit elements has been suggested by the Community Scholars program and reported here. The challenge now is for Los Angeles to implement the Ordinance in such a way that it meets all of the goals put forth in it. The buildings and projects chosen need to positively impact the economy, the environment, job creation and health and safety. Economic constraints resulting from the current state and national economic crisis will create a challenge in implementing the Ordinance. However, these difficult economic times further highlight the need to address environmental and economic issues simultaneously.

The implementation of the Ordinance will involve governance by an interdepartmental city task force and an advisory council made up of members of the community who will provide input and oversight. This governance body will be able to pose questions and make decisions about the Green Retrofit Workforce Development Program. The governance process will ensure that not only is energy efficiency maximized, but that good, safe jobs are created. Furthermore, governance will secure the establishment of job training programs and increase the likelihood that individuals from high poverty neighborhoods may benefit from this new program.

In order for the new retrofit Ordinance to produce the best results for the environment and community, buildings will be selected on the basis of building data and social criteria. In addition, recommendations for retrofits will be based on energy and water audits, retrocommissioning work and LEED^R-EB GAP Analysis. Recommendations should then be prioritized based on the greatest overall level of benefits to the economy, the environment, job creation and health and safety. Focusing on career-pathways and energy efficiency jobs, in coordination with the unions that represent city workers, the Building Trades and community members who serve in the Ordinance governance process will create a policy that produces good, green, safe jobs.