



CHERP[®] :

Community Home Energy Retrofit Project

A Successful Model for Driving Economic Recovery and Energy Efficiency in Your Community

The Claremont Story - now being replicated throughout California.

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CONTEXT

BACKGROUND FACTS:

- Buildings in the U.S. consume more energy than any other *COUNTRY* in the world besides the U.S. and China.
- Buildings in the U.S. produce more greenhouse gasses (40%) than any other sector, including all transportation. (Worldwide, buildings produce 60-70% of global emissions.)
- More than 50% of all the energy currently used in buildings is wasted.
- Our society currently has the knowledge, the technology and the materials available to retrofit every building in the U.S. to vastly improved levels of energy efficiency, comfort, durability, health, safety, cost savings, and CO2 emissions.
- Energy efficiency is a vast, untapped energy resource that, if tapped, could unlock trillions of dollars of savings and solve some of the most aggravated economic, geo-political, and environmental problems on the planet.
http://www.mckinsey.com/client_service/electric_power_and_natural_gas/latest_thinking/unlocking_energy_efficiency_in_the_us_economy
- This is a global problem with only local solutions.

NATIONAL AND LOCAL GOALS:

- The U.S. DOE and the State of California and the County of LA and the Cities throughout California know that in order to meet our energy efficiency goals, we must retrofit all existing buildings to achieve much higher efficiency levels. For example, in a city like Claremont, where residences consume 80% of the total electricity consumed, in order to reach our energy efficiency goals, we must retrofit residences.
- This is a huge national goal with only local solutions – local building owners retrofitting their buildings.

BARRIERS TO ACHIEVING OUR NATIONAL AND LOCAL GOALS

- It has become clear to all those involved in achieving our national energy efficiency goals in the building sector that *the highest barrier to success is the lack of comprehensive community engagement* around; 1. Education in the many benefits of energy efficiency in buildings and, 2. Comprehensive, community-wide coordination of all stakeholders - both public and private - in the marketing, incentivizing, selling and retrofitting of buildings on a massive scale.

WHAT IS CHERP®?

The Community Home Energy Retrofit Project (CHERP®) is a volunteer, non-profit organization that was created to eliminate the barriers to success of our critical, national, energy efficiency goals. CHERP is engaged in a comprehensive, replicable, state-wide program to help achieve aggressive goals for improved energy efficiency in buildings through education about the impact of buildings on greenhouse gas emissions and the many benefits that accrue to building owners and the city from retrofitting buildings. CHERP has now developed into an unprecedented community-wide collaborative effort by practicing the motto of “radical inclusion” and uniting as many community organizations and businesses as possible in the laser-sharp goal of retrofitting buildings on a massive scale. Both local and state-wide stakeholders are aligning with CHERP to support the mission: The Energy Network, Cities, Community Organizations, Retirement Communities, Universities, Colleges, Edison, So Cal Gas, Real Estate Brokers and Realtors,



Mortgage Brokers, Construction Companies, Equipment Manufacturers, Students, Professors and hundreds of Homeowners to date.

CHERP CLAREMONT ACCOMPLISHMENTS TO DATE

Phase I Claremont Goals: Accomplished!

1. Comprehensively educate the local community in the power and multiple benefits of energy efficiency and our national and state-wide goals to retrofit existing buildings to increase energy efficiency.
2. Invite the city and as many community organizations as possible to become strategic partners.
3. Form cooperative relationships with local contractors, expert in Home Performance with Energy Star.
4. Retrofit 130 homes - 1% of the local housing stock – ([Track Our Progress!](#)) to the deepest energy reduction possible to prove that “hyper-local” educational efforts and public/private cooperative relationships are effective.
5. Collect data on energy saved, dollars saved, comfort, health, indoor air quality, carbon mitigation, dollars invested in the community, and jobs created.

Phase I CHERP Claremont Results to date:

The results below prove the accomplishment of our triple bottom line focus – People, Planet, Profits.

- 220 Homes currently retrofitted (and growing weekly).
- \$3,000,000+ Million invested in local community real estate (and growing weekly).
- \$750,000+ in Rebates funneled into the Community from the EUC initiative (and growing weekly).
- \$55,000 to date Energy Champion money from the County of LA now being funneled to Pilgrim Place, Schools, and other Community projects.
- Average 28% modeled Energy Savings (we are proud of this number because the average energy reduction per retrofit in LA County is 19% - so CHERP has helped produce a 45% greater energy reduction per building than elsewhere in the County). Many CHERP homeowners have experienced 45-55% reductions in energy use and energy bill reductions.
- Average 28% reduction in energy bills for over 1% of the homes in Claremont that now acts like an annuity that continues to create more disposable, local income and will save much more over time as energy costs continue to rise while the retrofit investment is already made.
- Massive Reduction in Green House Gasses.
- Measurable increase in homeowner’s comfort and air-quality and a decrease in noise, dust and CO poisoning. (see case study videos on our website: <http://www.cherp.net/case-studies>)
- Dozens of local Construction Jobs Created across 13 construction companies (one local company alone grew from 2 to 25 employees in the last 2 years)
- Local property values are increased for 200 residences. (Recent studies show California properties are worth up to 9% more with Green Ratings.)
- As more energy-efficient and green features are retrofitted into homes and property values increase, property tax and sales tax revenue also increases.
- Sustainable Claremont – through the efforts of CHERP – became the TOP Energy Champion in LA County Claremont has Highest Per-Capita rate of retrofits in LA County.
- Claremont has highest rate of Deep-Energy Retrofits.
- Example of good global warming *mitigation* (reduction in greenhouse gasses) and *adaptation* practices (as the Inland Empire temperatures are predicted to rise 4° - 5° by 2050.



- Demonstrates that the Public and Private sectors can and must work together for effective and scale-able change initiatives.
- Created a CHERP model for retirement communities and HOAs through [The Pilgrim Place Energy Efficiency Project](#).
- CHERP now becoming a replicable model for other Communities

Phase II Goals of CHERP – state-wide expansion and more retrofits!

1. Launch new CHERPs in 2014: Huntington Beach and Monrovia now launching. Currently in “pre-launch” stage with Whittier, Culver City, Redlands, Carmel, Danville, and Sacramento Region.
2. Increase the retrofit goal in Claremont to 1,300 homes – 10% of the city’s housing stock. This continues to provide a “proof of success” model as we expand to other cities throughout California.
3. Identify other community organizations not yet engaged and present them with the opportunity to learn about the many benefits of energy efficiency in their homes and offices.
4. Develop even closer relationships with our current stakeholders to design new “best practice” initiatives for deeper education and participation levels.
5. Develop relationships with new strategic partners to help fund the ongoing organizational development of CHERP in order to make it sustainable into the future
6. Ongoing data collection

Best Practice Initiatives for Local Success

In the effort to educate both broadly and deeply in the community, CHERP has developed a number of “Best Practice Initiatives” to meaningfully engage a wide variety of individuals, organizations and professions. This list is expanding on a monthly basis.

1. **Core Group creation and development – local, community volunteers – people waiting to be discovered and participate**
 - Core Group (15-20 individuals in a city) creation and education as the means to initiate comprehensive education, launch new cities and sustain the effort into the future
2. **City Government and Staff education and engagement**
3. **Public/Private Partnerships: relationships with “Best-of-Class” Home Performance Contractors**
 - Meaningful organizational development and engagement with high quality contractors capable of holistic building analysis and deep-energy retrofits
 - Working definition of contractor qualifications for participation in CHERP to assure homeowner satisfaction and deep-energy retrofits
4. **Community Workshops, Celebrations and Events**
 - City Launches (150 people in Redlands)
 - Celebrations (400 people in Claremont)
 - On-going scheduled workshops at community centers, libraries and universities
5. **Community Organizations who want to participate**
 - i.e. Children’s Fund, Claremont Community Foundation, School Board, PFA’s, Churches, League of Women Voters, Schools
6. **Developing Strategic Partnerships with statewide leadership.**
7. **Youth – Interns from local Colleges and High School**



- Student projects, data collection, school presentations, participation in energy assessments and renovation procedures, community events, CHERP meetings, homeowner communications, social media, videos, event organizing
8. **Retirement Communities and HOAs - This is a vehicle for retrofitting dozens of homes at the same time to achieve economies of both time and money in the construction process**
 - Pilgrim Place Energy Efficiency Project model
 - Neighborhood HOAs and organizations
 9. **Ongoing relationships with several Universities and Colleges**
 - University courses and Senior Research Projects
 - HVAC rightsizing and EE in Claremont research projects meaningful the community
 - Pre and Post retrofit data collection
 10. **Professional Energy Education Partners (our PEEPs) who have a professional stake in the industry. CHERP is currently engaged with the following industries and is creating meaningful, ongoing education, mentorship (in contrast to “outreach” programs) and collaboration programs for each industry. Ongoing mentorship initiatives drive business model transformations within each industry, teaching an individual business owner how to capitalize on the benefits of the green/energy efficiency movement for themselves and their clients.**
 - Green Realtor education and *ongoing mentorship initiatives that drive deep energy efficiency retrofits, understanding of the value of green labels, green appraisals, EEMs, property value increases, and higher sales prices compared to comps.*
 - Mortgage Brokers
 - Manufacturers
 - Architects
 - Retailers
 - Real Estate Appraisers
 - Financial Planners
 11. **“CHERP Gives Back” Initiative** engages material and equipment suppliers and contractors in a program that donates a full retrofit to a deserving family after every 50 retrofits are accomplished.
 12. **Discovering the community-wide value of deep education in energy efficiency – Quality Control**
 - Educated consumers protect themselves from unscrupulous contractors and the very high opportunity costs associated with single-measure or surface level retrofits.

CHERP: A Project designed for Replication in Your City

CHERP was designed to be replicated. It was deigned to be easy to start in your city. It was designed to be launched with minimal up-front investment of dollars – mostly time. Created in Claremont by individuals and organizations to create a proto-type – a case-study of hope – CHERP is now ready to replicate itself in other cities.

CHERP can be started immediately in your city in one of four ways - as a:

1. Comprehensive effort involving City officials, various community organization representatives, certified retrofit contractors and volunteers from the community.
2. Ground-Up effort launched by a few individuals constituting a Core Group and at least one certified contractor – with other community organizations joining as results are produced.



3. Top Down effort launched by the city and at least 2 contractors – with other contractors and community organizations joining as results are produced.
4. Retirement Community or Homeowners Association – CHERP has created a “model-within-a-model”, [The Pilgrim Place Energy Efficiency Project](#) which explores the cost and time saving benefits of retrofitting many buildings at the same time. The Pilgrim Place goal is to retrofit all 160 living units on their 32 acre campus to reduce all the wasted energy and then to produce their remaining needs from solar PV. So far the Project has done an energy assessment (“test-in” analysis) on all homes and has retrofitted approx. 55 homes to date.

FREQUENTLY ASKED QUESTIONS: An Interview with Devon Hartman

What are the key elements of CHERP’s success?

CHERP attributes the local effort’s success to *four key factors*:

- Education: Spreading awareness of the impacts that energy upgrades in buildings can have on an individual, community and global scale.
- Collaboration: Bringing together a core group of people, and ultimately other organizations, who are dedicated to the cause.
- Public/Private Partnerships: Working cooperatively and deeply with top-notch, certified contractors that are committed to the building science of making a home radically more comfortable, healthy and energy efficient.
- Superior Results: Accomplishing deep energy retrofits -- far exceeding the average -- in order to demonstrate the physics and economics behind the entire EUC effort and to set a high bar for quality installation and performance results for the entire industry.

You have mentioned the “Triple Bottom Line” benefits of CHERP...

“CHERP’s mission and entire focus is retrofitting buildings – not just talking about it or about energy efficiency in general. The very act of retrofitting a building intrinsically produces a triple bottom line result – for both an individual building owner and the entire community. **People** are more comfortable (temperatures are regulated), healthier (less dust, insulation particulates and animal feces particles in the living space reducing respiratory illnesses) and safer (we discover many cases of unhealthy levels of carbon monoxide – the largest cause of death by poisoning in the U.S.) in their homes. Life on the **Planet** is helped through a reduction in the use of fossil fuels with an attending reduction in greenhouse gasses and other heavy metals and carcinogenic by-products. Local homeowner and community **Profits** are increased by reducing the cost of energy now and into the future as energy costs continue to rise. This in turn gives a community (and state) more disposable income to spend locally. Local economies profit further by hiring local contractors to add real value to local real estate, increasing the local tax base at the same time as creating more local jobs. By retrofitting just 1% of the homes in California (as we have done in Claremont) we would create 24,000 jobs. The goal of the CPUC is to retrofit all 13 million homes to an average energy reduction of 40%!”

Does CHERP focus only on Energy Efficiency?

“CHERP is the Trojan Horse for unpacking the entire sustainability discussion and community engagement. Energy Efficiency is at the heart of all global and local environmental discussions and once action is begun by an individual on energy efficiency, other major environmental issues can be addressed. For example, all buildings now “CHERPing” in Claremont have dramatically reduced their energy usage and are currently in the process of being Green Point Rated – a label that recent studies show can add as much as 9% to the



value of home at time of sale. With Green Point Ratings, we are focusing on the entire sustainability picture including water, waste, building materials and indoor air quality.”

Can you tell us more about CHERP as a “Demonstration Project”?

“At CHERP, we are focused on demonstration and education – to prove the initiative works, and then to educate others in how to replicate our success in much less time! CHERP was designed from the beginning to be a replicable case study. The brand, website and processes are all created and delineated so other cities and organizations can save precious time and achieve immediate results.

Individual homeowners and whole neighborhoods are participating as “demonstration projects”. Many homeowners have and continue to offer their homes for “energy parties” and demonstration workshops to highlight the benefits and techniques of the retrofit work done on their homes.

At the neighborhood level, we have helped to create the Pilgrim Place Energy Efficiency Project to demonstrate how many individual retrofits can be executed at once to gain efficiencies in both project cost and construction time. [The Pilgrim Place Energy Efficiency Project](#) is our demonstration-project-within-a-demonstration-project. This entire community of 350 residents have committed to retrofitting their entire 32 acre campus and we are now beginning the process of holding state and national workshops to teach other retirement communities how to achieve the same success. CHERP gave Lectures and Workshops last year in Palm Springs for the state-wide Aging Services Conference and also in Denver for the Leading Age national conference for retirement communities.

As more work gets accomplished, more of the community is exposed to the benefits and retrofit techniques through our energy parties and our “in-progress” construction workshops. This is an ongoing, “evergreen” educational initiative. This year we are designing curriculum for the grade schools, the junior high and the high schools, working with the students, teachers and parents. CHERP also has developed an on-going internship program with the Claremont Colleges where engineering and environmental studies students help us collect technical retrofit data and communicate with the wider community.”

TESTIMONIALS REGARDING THE EFFECTIVENESS OF CHERP

From City Council and City Staff

Larry Schroeder – Mayor of Claremont, “CHERP has done a masterful job of educating our community and most importantly in a community of very educated citizens, inspired real community engagement in retrofitting our existing housing stock for energy efficiency. Claremont has set some ambitious, city-wide energy efficiency goals, and with our residential buildings consuming 80% of the total energy used, it is imperative we reduce our residential energy consumption.”

Joe Lyons – Mayor Pro-Tem, “CHERP has provided our community with a wonderful vehicle for community participation in addressing one of the most important issues facing local and national government today – the fossil fuel crisis and it’s staggering costs to our communities. CHERP has been a fun and very effective method for actually accomplishing our energy efficiency goals – not just discussing them over and over, hoping things will get better. I whole-heartedly suggest adopting a CHERP program in your city.”

Chris Veirs – Senior Planner and Sustainability Coordinator, City of Claremont, “The CHERP project has benefitted our community in many ways. On the financial side, CHERP has created local jobs, spurred investment in our local housing stock, and allowed future dollars to remain in the community rather than



going to pay high utility bills. The effort has also lowered the community's environmental footprint and encouraged our residents to work together toward a common goal. Residents of Claremont are now even more conscious about how their actions affect others. This translates not only into how we use our resources, but how we treat each other as neighbors... In the end, it's all about quality of life, which has been enhanced by this effort."

Tony Ramos – City Manager, City of Claremont, "The CHERP program has been very successful in the City of Claremont and has provided our residents with an opportunity to improve the quality of their lives through energy retrofits resulting in lower utility bills and increased comfort. Claremont residents were also able to take advantage of thousands of dollars in utility company rebates to offset costs associated with energy-efficient improvements. Devon has been very effective in coordinating the interest of our residents to reduce energy use with strategic members of the business community, utility companies and community organizations in a collaborate effort to promote and facilitate the implementation of the program. The City of Claremont strongly endorses CHERP."

From Business Leaders

John Shipman, President, Energy Efficiency Management, Inc. "CHERP has proven to be a great strategic partner for me in reaching the public with my Certified Green Real Estate Professional (CGREP) course, bringing green building education to the Real Estate, Mortgage and Appraisal professions – professionals and industries critical to our state-wide energy efficiency, market transformation goals. CHERP has also been an advocate and supporter of my real estate development division that buys properties and renovates them with green building, energy efficiency measures and certified green labeling and also my business as a Home Performance Contractor. CHERP is the most successful model I know of for public/private partnerships in our industry today."

Andrew Durben, President, Home Performance Matters, "Over the past two years our energy retrofit company has provided energy-efficient home improvements to over 140 Claremont homeowners allowing the company to expand from one employee to 25 full time employees who are supporting a total of 75 people. Our company has completed over \$2.5 million dollars' worth of home improvements. A significant portion of the cost of these improvements was offset by over \$600,000 of energy-efficient rebates provided by Energy Upgrade California. A significant portion of this work was stimulated by CHERP."

From Homeowners

Michael Shea – Architect, Claremont Resident, "I enthusiastically recommend CHERP to any city interested in seriously addressing their climate mitigation requirements and energy efficiency goals. As a homeowner, I have benefited greatly from a deep energy retrofit on my house and, as a concerned and engaged citizen, our community has greatly benefited from the extraordinarily effective efforts of the wonderful, grass-roots CHERP programs."

Dr. Paul Minus – Professor Emeritus, Methodist Theological School in Ohio; Pilgrim Place Resident and co-chair of the community's Energy Retrofit Group.



“Dear Devon: This is a note of appreciation for all that CHERP has done for our retirement community. We have now retrofitted 57 homes here at Pilgrim Place, with more being done every month. Without your leadership and guidance we would never have embarked so boldly on this journey or accomplished so much. Your encouragement and support have allowed us to unite the executive staff and our 340 residents in a single-focused and unified effort to realize the many benefits of energy efficiency, both for our individual residents and for the planet. Speaking more personally, I can say that – thanks to your efforts – my wife and I have been able to retrofit our home, receive rebates equaling the cost of the work done, make our home more comfortable, healthier and safer, as well as contribute to a huge reduction in our overall carbon footprint. As a resident of Pilgrim Place and co-chair of our Energy Retrofit Group, I will be so bold as to speak for all our residents in stating that we are very grateful for your hard work and for CHERP’s availability to help us in this important mission. We are also now ready to partner with CHERP and undertake vigorous action reaching out to other retirement communities across California and the nation to encourage them to take similar action.”

Ed Hendrickson and Tracey Stoll – Claremont residents and CHERP volunteers, “Dear CHERP (Devon): We wanted to write you a letter to express our appreciation for the valuable service CHERP provides our city. We know that you are run by volunteers who are devoting many personal hours to this project and I want you to know how much we (and our myriad house guests) appreciate all your efforts! Specifically, *the value of comprehensive public education around energy efficiency and building science issues is invaluable.* There are so many benefits from energy efficiency available to homeowners, and most people are not even aware of them! Until we came to your workshops, we had no idea how much energy could be saved or how comfortable we could finally be in our home – not to mention how large a role we homeowners have in mitigating global green-house gasses. CHERP gave us (and many others) the inspiration and the courage necessary to take the plunge and have our home upgraded. We are now enjoying our home on a whole new level, paying 30-40% less on energy bills and marveling at how comfortable and quiet our house has become. CHERP’s efforts are tremendously valuable to our entire community. Keep up the good work!”

From State Government Officials

Ken Alex – Senior Advisor on Energy to Governor Brown and Director of the Office of Planning and Research, “The City of Claremont has a compelling story to tell the nation. I had the opportunity to see the program's results first hand. We are excited at your leadership and what the people of this community have been able to achieve, and are proud to showcase your accomplishments as a model for other communities to follow. The CHERP program has the potential to recast how we approach home retrofits. OPR supports your efforts.”

Andrew McAllister – California Energy Commissioner, “Energy Upgrade California is really a brand for the idea that our environment matters and that we can improve our buildings in a way that increases our quality of life. CHERP is an excellent example of a well-coordinated and executed Public Private Partnership where homeowners, businesses, and government all come out as winners”.



Howard Choy - General Manager of Los Angeles County's Office of Sustainability, "Los Angeles County has focused on creating regional networks, such as the one developed by CHERP in Claremont, to reach out to local communities about the importance of energy upgrades. Deep energy retrofits are one of the most critical components to California's energy efficiency plans. Homes and buildings make up the bulk of our nation's energy use. Claremont has demonstrated the potential for energy savings that can be achieved when a community works together for a common cause."

From Manufacturers and Distributors

Blaine Sullivan – Regional Manager, Day & Night Heating and Cooling Products, "The retrofitting of existing buildings for energy efficiency in the U.S. is a goal that we obviously support, but not only because we have the opportunity to sell more equipment, but also because we are committed to our nation's energy efficiency goals. We support CHERP because they have a proven track record of effectively educating the market and stimulating consumer demand for holistic and systematic building retrofit technologies, for both better equipment and quality installation procedures – perhaps the most important element in the equation. Retrofit companies aligned with CHERP are experiencing phenomenal growth from increased demand and are delivering much higher than average energy usage and comfort results from superior installation procedures."

Pat McNally, General Manager, Air Cold Supply distributors, "We are excited to be working with CHERP as they engage with more HVAC and Remodeling contractors who are committed to high performance, whole-system, energy efficiency, retrofit work. We are currently engaged with CHERP in developing Air Cold into a one-stop supply resource for all parts and equipment necessary for deep energy retrofit. They have a model that will greatly facilitate market transformation in the HVAC industry."

