



HIGH PERFORMANCE, GREEN RESIDENTIAL PROGRAM

CULTIVATE GREEN

The Houston Advanced Research Center (HARC), a 501(c)(3) non-profit, has convened a consortium of local stakeholders to develop and implement a high performance, green, disaster-resistant residential building and sustainable landscape initiative for the Houston Galveston Region.

MISSION

Establish high performance, energy resourceful, environmentally sound, disaster-resistant, buildings and sustainable landscape as a voluntary regional residential home construction standard.

OVERALL PROGRAM OUTCOME

Implementation of the Cultivate Green initiative, a market transformation program, will reduce energy consumption and serve to improve and protect the health, safety and general welfare of the Houston Galveston region and its citizens.

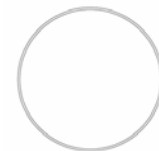
BACKGROUND

Homes designed and constructed under the Cultivate Green program specifications will reduce the costs of ownership by increasing energy-efficiency, conserving water, and reducing maintenance costs through the use of more durable building materials. These houses are engineered to go beyond Energy Star, incorporating even greater energy savings, to be more disaster or wind-resistant and address issues of safety, security, and health. In designing these homes, careful consideration is given to material selection and application. The use of materials that give strong consideration to environmental friendliness and improved indoor air quality are a priority. These landscapes incorporate the use of xeriscaping, more natural and native plantings and stormwater retention. Cumulatively these methods of design, technologies and materials are loosely and frequently termed "Green." They cover a full range of agendas ranging from environmental, social, economic and the protection of public health, safety and welfare.

A recent Houston area forecast predicts that annually 35,000 new homes will be added to the regional single family home inventory for at least the next five years. If these dwelling units are "Green" the building community and those associated will be credited for having a tremendously positive impact on the health, safety and welfare of the overall region. Not only will "Green Housing stock have an immediate impact but the design and construction will affect the environment for the life of the dwelling, 50 to 100 years.

Stakeholders working with HARC on program development and implementation include commitments from the local chapter of the United States Green Building Council, Houston Chapter of the American Institute of Architects, several local architectural firms, local Energy Star Program, Greater Houston Builders Association, local and national home builders and a large national engineering consulting firm. The consortium has begun organizational and partnership development as well as design of a roadmap that will specify the program and its implementation.

COLLABORATORS



ENVIRONMENT
ASSOCIATES
ARCHITECTS & CONSULTANTS



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TASKS

The program will include a mix of activities that will include at a minimum the following:

WEBSITE

An interactive website will be implemented that will be a vehicle for the dissemination of location-specific information that is focused on:

- The design and construction of new high performance, green, disaster resistant buildings and sustainable landscapes for the Houston/Galveston region, and
- The redesign and remodeling of existing homes and landscapes that incorporate as many elements as feasible of the design, construction techniques and materials promoted throughout this website.

The website will be an access point for information and analysis opportunities relative to economic and environmental impact of design, technology and materials. As initiated the web-site will be a source of information for consumers, building contracts, designers, realtors, and for those in the mortgage lending community.

POTENTIAL WEBSITE CONTENT:

- Energy savings calculators,
- Opportunity for conducting energy analyses and to determine potential energy savings (HERS),
- Principals of sustainable living,
- General options for green residential construction and remodeling practices,
- Opportunities, technologies and materials that can improve indoor air quality,
- Techniques for design and implementation of sustainable landscaping,
- Climate specific recommendations for building and landscaping,
- Materials and links to local suppliers,
- Links to local green builders/contractors,
- Links to local green designers/architects,
- Links to site sponsors,
- Technology and materials available to reduce damage caused by high winds, flooding and hurricanes,
- Opportunities to improve water conservation within the structure and in landscape, and
- Links to the standards checklists established through this consortium.

The website will be used to disseminate information and as an educational tool for consumers, builders, contractors, architects, landscape architects, and interior design engineers. Informational and educational materials will be available for insurance companies, realtors, as well as to bankers and mortgage lenders will also be available.

A website is a key program and public relations component as the internet is the preferred method of information discovery for the 15 to 60 age group. The site will be a strong program and promotional element as well as be a great advertising opportunity for partners.

LOCAL SOURCE DATABASE

This online site will include a list of features, materials and their specifications and applications, technologies and standards that can be used to determine appropriate and applicable options that should be considered or included in an initial home design or remodeling plan. The site will be designed to allow links from materials and technologies pages to participant provider contact information. Opportunities to participate in the database will be offered to architects, suppliers of green materials, contractors, landscape architects and others that work toward the regional realization of a high performance, green, disaster resistant residential community.

CHECKLIST OR METHOD OF CERTIFICATION AND QUANTIFICATION OF PARTICIPATION

The checklist will define the location specific design, technology, and/or material specifications that are necessary for a home to be certified as a participant facility in the Cultivate Green program. As well as certification of facility participation this will be the tool used to quantify community and regional program benefits, such as Energy Efficiency credits for Senate Bill 5 and potential air quality benefits for the State Air Quality Implementation Plan. In order to insure cities, counties and communities have the opportunity to receive direct benefit from this initiative it will be necessary for this type of quantification, and which will be reviewed by a third party. This review and quantification will also be necessary to expand local opportunities for energy efficient and green mortgages. As part of the consortium, HARC may provide the third party review.

PARTICIPANT RECOGNITION

Participants in the program will have the opportunity to be recognized regionally and to display such recognition on their website and on advertising materials.

TRAINING AND EDUCATIONAL OPPORTUNITIES

Opportunities will be developed and offered that will facilitate an expanded regional knowledge base. The consortium will use its partnerships to reach into the community to include more than the usual participants. Potential educational opportunities will be offered to the design, building and construction community and their staffs, government staff members including permitting and inspection personnel, local consumers as well as realtors, bankers, and the insurance industry.

BRAND RECOGNITION

The consortium will determine and develop opportunities that will be used to develop regional program brand recognition as well as to promote general program guidelines. The use of such techniques as brochures, billboards, awards, and home tours will be employed.

RESEARCH CONCERNING BARRIERS

Research concerning barriers to acceptance and implementation will be performed. Work would also include determining methods of accelerating acceptance and implementation. This would potentially include:

- A builder/consumer survey to establish a regional baseline of barriers, and a more complete understanding of the levels of regional awareness, knowledge, and acceptance;
- Review of building codes, design standards, and the processes through which these are implemented;
- The development of a list of opportunities for action that will facilitate changes that will accelerate implementation of these established standards; and
- The development of recommendations to policymakers and stakeholders which will assist in the acceleration of implementation.

OUTCOMES

1. Increased awareness concerning high performance, green, disaster-resistant buildings, sustainable landscape and land development practices.
2. Increased market demand for homes built and remodeled to these established standards.
3. Reduced energy consumption in residential housing.
4. Increased regional availability and application of "Green" materials and technology.
5. Reduced percentage of residential construction waste going into regional landfills.
6. Reduced operating and maintenance costs of homes built to these standards and thus increased home affordability.
7. Increased opportunities for energy and green based mortgage options.
8. Increased percentage of homes remodeled and/or constructed incorporating materials that increase resistance to storm and wind damage
9. Increased percentage of homes using xeriscaping and native plants.
10. Reduced percentage of air pollutants manufactured as a result of home construction and operation

HOUSTON ADVANCED RESEARCH CENTER

Founded in 1982, the HARC, (www.harc.edu) is a nonprofit organization based in The Woodlands, Texas, dedicated to improving human and ecosystem well-being through the application of sustainability science and principles of sustainable development.

HARC serves as an unbiased, neutral organization that cooperates with universities, industry, governmental agencies and other non-profits to address complex and pressing issues relating to how people interact with ecosystems on a regional scale. By applying an interdisciplinary approach to research and policy priorities, HARC seeks to improve decision-making and increase awareness of how science and technology can support and implement sustainability concepts.

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