

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE #</b>	<b>Sustainability Efforts</b>
Arizona Chemical Apprenticeship Program IJ – Panama City Plant	Rhonda Crider	850-914-8277	The program recycles all items: paper, varieties of light bulbs, batteries, computer components. During recent building demolitions at a former plant site the company brought in specialists for asbestos removal and site clean-up.
CHELCO, Inc. INJ	Cindy McCombs	850-892-5069	The program recycles used aluminum and copper wire, installation wire scraps. Provide special canisters for aluminum cans and pull tabs and these are donated to the local Ronald McDonald House. All used batteries or out of service rechargeable batteries are recycled. All unneeded paper is shredded through a local paper recycling firm.
City of Tallahassee Electric Utility INJ	Jim DeLong	Cell 556-2994	The city is shifting to more energy efficient vehicles. Vehicles and heavy equipment are not permitted to just idle when not engaged in a task. All wire piles are recycled. The city contracts with a manufacturer to re-build (re-cycle) transformers and other electrical components where practical.
Florida Public Utilities IJ	Buddy Shelley	Cell 850-577-6480	All aluminum and copper scrap are recycled. All cardboard is collected and donated a local agency that recycles it and helps to fund local programs for the handicapped. To save on fuel, tracking devices have been installed on repair vehicles.
Gulf Coast Academy Electrical Technology JAC	Dale Cope	850-994-9033	The program bought a no-longer-in-use public school building to use as their training facility. They invested some \$29,000 to construct a trailer-based, functioning, training exhibit to showcase wind and solar (photo voltaic) power and the battery systems that back them up. These curriculum components are in the apprentice's RTI. Grid solar panels are installed on the school to reduce their carbon footprint. A deal was made with the panel manufacturers that the program could add a single panel at a time as the program's funds allowed. The program was awarded a training grant from the local work force board demonstrate to companies and individuals in the service area the financial and environmental benefits of solar and wind power. Another deal was made with a local bank to provide low cost loans to builders to install solar power in newly constructed homes in the area.
NW Florida Bricklayers GNJ	Jeff Murie	850-244-2901	On the job site all broken concrete blocks and broken chunks of concrete go into specific dumpsters to be recycled into the ingredients for new concrete blocks. All scrap rebar and dura-wall metal is recycled.
NW Florida HVAC Contractors GNJ	Alex Pollock	850-626-5555	All cardboard is recycled and donated to the county Association for Retarded Citizens who sell it and use the money for their clients. Recycling is practiced on all scrap. Mercury is collected, kept in stable containers recycled through appropriate programs for hazardous waste. All scrap metal and salvaged metal is recycled.
Okaloosa Walton Apprenticeship Program GNJ	Donald Carawan	850-862-0386	Air force bases have set up recycle specific dumpsters and containers for contractors to use for items to be recycled or, if environmentally sensitive, to be secured and disposed of safely.
Pate Electric INJ	Georgia Smith	850-763-1066 x16	The program recycles wire piles and spent electrical components. Keep their repair trucks at air force base job site and shuttle workers to and from job site via a passenger van.
Pensacola Electrical Apprenticeship College GNJ	Kathryn Boyd	850-6200 x2183	The program is shifting to more and more paperless management. Participating employers donate usable scrap wire, cable, and components of the trade to the apprenticeship program and high school electronics program. To save on gas, participating employers use shuttle busses to the job site.

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE #</b>	<b>Sustainability Efforts</b>
Pensacola Plumbers & Steamfitters JAC	Kenneth Lacey	Cell 850-723-1792	Participating employers recycle all metal scraps.
Performance Machining Services Apprenticeship Program INJ	Jason Phillips	850-469-9106	The company recycles its metal scrap.
Santa Rosa Child Care GNJ	Larry Penton	850-983-5700 x214	As appropriate, bio-degradable diapers are used. The staff recycles aluminum cans.
Tallahassee Capitol Chapter Masonry Association of Florida, Inc. GNJ	Al Herndon	Cell 904-838-6531	At each work site unused and broken block and brick are recycled as fill. Block and mortar are crushed and recycled into new block. Drains are protected from accepting mortar laden water and runoff by using straw barriers and various filters. The apprentice NCCER curriculum teaches "building green" via Environmental Awareness components in each of its three instructional levels.
Tallahassee Electrical Contractors Association GNJ	Lynn Takach	850-576-2342	Standard recycling of wiring scraps and metal. Installed photovoltaic sheets installed on their building to reduce electric consumption. Moving to less a less paper used.
Builders Association of North Central Florida Master Trades Committee GNJ	Gina Hill	352-372-5649	While they have not (yet) implemented any green technology and/or sustainable energy training into our apprenticeship program, the program has recently moved into a "green" building. The recently opened Charles R. Perry Construction Institute building, the new home of the apprenticeship program, is the first Leadership in Energy and Environmental Design (LEED) - certified building on the Santa Fe College campus. It is the site of Gainesville's first "thin-film solar arrays." The two thin-film arrays have a total of 25 kW of generating capacity expected to produce more than 30,000 kWh of electricity annually. In addition to on-site renewable energy generation, the Charles R. Perry building will gain LEED points for site selection, alternative transportation (due to proximity to bus stops and provision of bicycle storage and changing rooms), management of the quality and quantity of storm water runoff, water efficiency and optimized energy performance. It is projected to attain a silver or better LEED rating.
Florida Automatic Sprinkler Training Northeast Florida Chapter GNJ	Joann Ray	904-703-3170	<p><b>1. System Design -The Introduction of Hydraulic Design Method.</b> The systems are hydraulically designed to meet specific water delivery densities.</p> <ol style="list-style-type: none"> <li>They are more efficient from both material and labor standpoint</li> <li>Fewer trips to the job-site saving use of fuel and associated pollution.</li> <li>Less time installing a system.</li> <li>Reducing pipe size reduces use of raw material and supporting system devices and material.</li> <li>Less weight to transport reduces amount of fuel used.</li> </ol> <p><b>2. Innovation in Design and use of Supporting System Components.</b></p> <ol style="list-style-type: none"> <li>Sprinkler heads are now designed to have the water spray cover a greater area (400sq. ft. vs. 130 sq ft.)</li> <li>Sprinkler heads are designed for specific applications as opposed to the "old sprinklers" where one head was used in many applications.</li> <li>Valves and fittings are faster operating, lighter in weight and construction.</li> </ol>

PROGRAM	CONTACT	PHONE #	<b>Sustainability Efforts</b>
			<p><b>3. <u>General/routine shop and on-job-site clean-up and recycling practices.</u></b>  a. Scrap pipe from the fabrication shop and scrap from threading machines as well as used cutting oil is recycled, has been for years.  b. Most job materials are brought back to the shop for the same purpose.</p> <p><b>4. <u>Working and Cooperating with General Contractors that actively seek and get projects that are subject to the guidelines and goals of LEED (Leadership in Energy and Environmental Design).</u></b>  a. Each project has specific goals for recycling and use of environmentally friendly materials.  b. When the goals are accessed and when met the project is given a rating, i.e.  c. When a project formally achieves one of the "status levels", LEED Gold or LEED Certified for example it required all sub-contractors commitment to work and contribute toward obtaining points which when added up determine the goal and status level achieved and awarded to the entire project.</p> <p>In summary, they teach the student about these systems and equipment as they become certified and approved for use in the industry. So "Green" is an ongoing effort.</p>
Flagler Child Care GNJ	Maureen Stowell	386-517-2220	<p>The Program for Early Education has been implementing Green Technology into the registered apprenticeship program. The GNJ Committee Members reported that they are doing several activities with the children and the parents in their Early Education Centers. They teach a program by Doodis &amp; Sparky that implements Reduce, Reuse, and Recycle for making the environment greener and cleaner. The Child Care teachers implement using recycled material for art projects. The schools are buying recycled paper products and using real dishes that are not put in the recycle bins. The children are taught lessons about the marks on the bottom of bottles, cans, and other materials to know how and where to recycle the materials in the bins that are available in the schools and at their own homes. Teachers encourage parents to bring in recycled printer cartridges, cell phones and other items to recycle. Green products are used for cleaning such as paper towels and cups. Teachers do lessons on the environment and how to keep it clean which include beach and park cleaning days.</p>
Flagler County Community Apprenticeship Program GNJ	Nick Della Fave	386-466-7602	<p>Program has been planning how to introduce Green Technology into the construction trades of the Electrician and the HVAC Programs and also extend it into the Landscape Technician Program as well. Staff member recently attended a Green Expo presented by the Flagler Home Builders Association to promote programs and to encourage participation of their 175 members to contribute their knowledge and ideas to steer programs. Staff in the process of collecting information, which would be pertinent course study material for the Electrician and HVAC programs in the Conservation and Alternate Energy areas. In Landscape Technician program researching material which would address the use of plants and vegetation which require less irrigation and application of chemicals. Plan is to implement quality blocks of instruction in Green Technology as developed.</p>

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE #</b>	<b>Sustainability Efforts</b>
Flagler County Schools IW	Maureen Stowell  OR  Nick Della Fave	386-446-7602   386-446-7602	<p>The Child Care teachers implement using recycled material for art projects. The schools are buying recycled paper products and using real dishes that are not put in the recycle bins. The children are taught lessons about the marks on the bottom of bottles, cans, and other materials to know how and where to recycle the materials in the bins that are available in the schools and at their own homes. Teachers encourage parents to bring in recycled printer cartridges, cell phones and other items to recycle. Green products are used for cleaning such as paper towels and cups. Teachers do lessons on the environment and how to keep it clean which include beach and park cleaning days.</p> <p>The Adult Education Early Learning Center in Bunnell grows an organic garden each spring and the children help to maintain and care for the produce. Several centers have fall harvest and buy the pumpkins and gourds from local farmers. At this time, there were not any centers who said they buy from local farms.</p>
Florida Public Utilities IJ	Jorge Puentes	904-261-3664	Have modules that teach apprentices about the storage of energy in batteries. Also teach about solar energy, that it can be converted into electricity to be used in homes.
Greater Northeast Florida Chefs' Association GNJ	Chef Anthony Lowman	904-547-3463	Reviewing applications that can be implemented the quickest. Recycling paper products, i.e. cardboard boxes, has been ongoing for years. Deep fat fryer oil has been picked up for recycling into bio-fuel for years at every County School Food Service Operation. Extremely interested in getting away from Styro-foam this school year.
International Union of Elevator Constructors (IUEC) L.U. #49 JAC	Richard Pafford	904-353-7570	Program is expanding computer based training programs. This allows apprentices to review material without the need to send printed material. Also, mechanics can complete required continuing education with web casts on line. This again eliminates the need for printed material and reduces travel to a site for instruction. Trade upgrading old relay logic controls with variable frequency drives which consume less energy to operate.
Jacksonville Electrical JATC	James Nolan	904-737-7533	<p>Green Technologies include Photovoltaic Systems, Programmable Logic Controllers, Fuel Cells, Power Quality, Wind Systems, Cable Splicing, Building Automation are all part of our current Apprenticeship class room training.</p> <p>Photovoltaic Systems includes: Fundamentals of Solar Radiation, Sun - Earth Relationships, Solar Radiation Data and Measurements, Site Survey's and Planning, Photovoltaic Components and Devices, Batteries, Charge Controllers, System Sizing, Mechanical &amp; Electrical Integration, Utility Interconnection, Permitting And Inspection, Operation and Maintenance and Economic Analysis.</p> <p>North American Board of Certified Energy Practitioners (NABCEP) - Also provide NABCEP testing for the Certificate of Knowledge (COK) for Apprentices, but not required for Apprenticeship.</p> <p>Power Quality includes: Power Distribution Systems, Terminology-Costs &amp; Concepts, Types of Power Problems, Harmonics, Survey's and Power System Trouble Shooting.</p>

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE #</b>	<b>Sustainability Efforts</b>
			Building Automation includes: Electrical Systems, Lighting Source & Controls, Lighting System Control Devices, HVAC Systems-Control Devices-Applications, Plumbing Systems, Fire Protection Systems, Security Systems, Access Control Systems, Voice-Data-Video Systems, and Elevator Systems.
Jacksonville Electrical TeleData JATC	James Nolan	904-737-7533	The TELEDATA Apprenticeship Program is almost all Green Technology from Voice to Data to Video. It provides avenues for society to become paperless, obtain building automation from remote locations, enables workers to stay home and connect to the office to perform work tasks over the Internet. Enables teleconferences/webinars, which saves on traveling and reduces carbon emissions. Installing and Maintaining the Electronic Infrastructure is key to reducing carbon emissions.
Jacksonville Painters and Allied Trades JATC	Rudy Schlichting	904-731-3828	The Painters and Allied Trades have implemented "Green Sustainability Awareness" training courses as both journeymen and apprentices upgrades as well as part of focus in core training curriculum. Included in this Green Awareness Training are topics such as "Chemical and Hazardous Materials Handling, Use and Storage", "Green Building Products and Technology", "Weatherization", and "Basic Awareness of Green Technology and LEEDS Certification Requirements". Currently training in this emerging market and are looking at ways to increase capacity in this exciting and innovative industry.
JEA IJW	Wes Grant	904-665-7617	<p>Working hard to get into this field. Have been awarded stimulus monies to advance smart grid mostly in meters. The Jacksonville Business Journal and The Florida Times-Union have interviewed Randy Boswell, vice president of Corporate Data Integration, about JEA's grant proposal for stimulus funds for Smart Grid projects. JEA was notified by the U.S. Department of Energy (DOE) that it is selected for "award negotiations." This means that JEA will now develop specific criteria for each project and the DOE will decide how much funding to supply.</p> <p>The projects that JEA proposed in the grant were all projects that were in the planning stages, to be implemented over the next several years. Some of the projects have to do with providing consumption information to customers to allow them to better control their energy usage.</p> <p>If negotiations with the DOE and vendors are successful, the stimulus funds will allow program to move forward and possibly expand some of these projects.</p>
North-Central Florida Chapter Masonry Association of Florida GNJ	Al Herndon	904-284-7556	At each work site unused and broken blocks and bricks are recycled. (Some of this is used as fill.) Blocks are crushed and are recycled to make new blocks. Drains are protected from accepting mortar laden water and runoff by using straw barriers and various filters. The apprentice NCCER Masonry Levels 1, 2, 3 and the NCCER Core book has incorporated Building Green into the curricula.
North Central Florida Operating Engineers JAC	Ricky Musslewhite	904-783-6181	The type of Green Technology incorporated into training program is a mobile crane simulator used to test skill levels of new apprentice's and increase skill level of journeymen. Also use the simulator in signal person training and plan to continue to use it at career fairs and other events.
Nassau County Board of	Daniel Salmon	904-548-4688	Recycle administration office paper. Expect this year to utilize our apprentices with

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE #</b>	<b>Sustainability Efforts</b>
County Commissioners IJ			on the job training for the installation of occupancy sensor lighting controls in at least one of largest administration buildings. Recent HVAC graduates were utilized in the installations of hot water recovery systems at Animal Control Facility. Also install high efficiency air to air heat pump systems whenever possible in facilities.
Northeast Florida Chapter Masonry Association of Florida GNJ	Al Herndon	904-838-6531	At each work site unused and broken blocks and bricks are recycled. (Some of this is used as fill.) Blocks are crushed and are recycled to make new blocks. Drains are protected from accepting mortar laden water and runoff by using straw barriers and various filters. The apprentice NCCER Masonry Levels 1, 2, 3 and the NCCER Core book has incorporated Building Green into the curricula.
Northeast Florida Builders Association GNJ	Robin Roundtree	904-725-4355	During the summer provided a Refrigerant Handling Certification Class to HAR apprentices. Because of the economy, many were not able to attend. In the future, LEED (Leadership in Energy & Environmental Design) training is something hope to incorporate into program as well as offer current certifications in the other trades. Carpentry, electrical, heating and air conditioning, and plumbing participating employers incorporate green technology into their projects - solar water heaters, "green" construction materials, recycling unused materials, etc. As instructors work for participating employers, they inform the apprentices in the type and use of green technology they are using in the field.
Northeast Florida Surveyors Apprenticeship Committee, Inc. GNJ	Jeff McGinley	877-898-7246	Looking at using the NCCER curriculum "Your Role in the Green Environment". This is a LEED Version 3. The course is 15 hours.
Painter Masonry, Inc. INJ	Jerry Painter	352-378-7511	At each work site unused and broken blocks and bricks are recycled. (Some of this is used as fill.) Blocks are crushed and are recycled to make new blocks. Drains are protected from accepting mortar laden water and runoff by using straw barriers and various filters. The apprentice NCCER Masonry Levels 1, 2, 3 and the NCCER Core book has incorporated Building Green into the curricula.
Bay Area Electrical GNJ	Mike Lynn	727-538-7167, Ext. 2070	The program is introducing solar energy curriculum with emphasis on photovoltaic (using cell crystals to generate electrical energy).
Central Florida Asbestos (Insulators) JATC	Billy Wilkerson	813-365-0041	The program is revising theoretical studies to include training in solar energy panel insulation and work activities. This program is working with Work-Net Pinellas, local workforce board to develop a "green energy" grant from the U.S. Department of Energy.
Florida Gulf Coast Chapter ABC, Inc., GNJ	Lisa Boyette	813-879-8064	<p>The program is adding curriculum and training activities to their Apprenticeship program addressing the "green energy initiatives". Also, in reference to "Green" training, three craft Instructors are certified to teach the NCCER "Your Role in the Green Environment" curricula. Contracted with the Tampa Bay Workforce Alliance to provide the certification to a group they worked with this past summer. In addition, all third year apprenticeship students receive this certification.</p> <p>Education Director at Associated Builders and Contractors is NCCER Certified Master Trainer. Currently, employ eighteen Certified Trade Instructors that teach within scope of six commercial trades. This past summer contracted with the Tampa Bay Workforce Alliance Board to provide NCCER "Your Role in the Green Environment" to a group of 17-19 year-old youths. This curriculum was developed and published by NCCER as laborer-level Green Collar Workforce training. Had a</p>

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE #</b>	<b>Sustainability Efforts</b>
			great group of students who all received the NCCER book and certification. In addition, program is a NCCER Certified Assessment Testing Center. Recently been contacted by the Workforce Connection of Citrus, Marion and Levy County in reference to providing assessment testing to a few displaced candidates in their area. Workforce Connection is working with these candidates to defer the cost of the tests. More and more industrial companies are requiring all workers to possess a NCCER Assessment Certification in order to obtain a position.
Tampa Area Electrical JATC	David McCraw	813-621-3002	National Electrical Association developing new curriculum to include "green" energy training activities.
Tampa Ironworkers JATC	Reis James	813-621-4426	The national and local apprenticeship program curriculum focuses new training and related theory activities to include "wind energy". Their related theory and methodology relates to construction and installation of structural steel windmills.
Tampa Bay Pipe Trades JATC	Lee Middleton	813-659-2450	National and local apprenticeship programs are instituting new curriculum and training activities that addresses the green energy initiative. The plumbers have a grant from the U.S. Department of Labor with workforce center and technical education centers in Pinellas County to provide pre-apprentices with "welding techniques and training" necessary for entrance into their apprenticeship program.
<u>Associated Builders and Contractors Institute</u>	Ruth Tirado	954-984-0075	ABCI is adding to all of its apprenticeship curricula a 15 hour Green Module. It is published by the National Center for Construction Education and Research and endorsed by Green Advantage®. In terms of prioritization it demonstrates what matters most for the green environment. It covers all the major challenges to the green environment. Students will learn about the life cycle phases of a building and what occurs to the green environment over its life cycle. The module identifies green alternatives to conventional building practices it also describes the good and bad of those alternatives. This module will explain specific practices one can apply at work to improve their outcome for the green environment. Apprentices will be taught on how green building will contribute to a project's Leadership in Energy and Environmental Design (LEED) rating system.
Florida Electrical Apprenticeship Association Inc. GNJ	Pam Anderson	561-697-4893	The only instruction at this time are videos, and have had a contractor come in and speak about Green Tech. Have had several apprentices in the past that have worked for contractors that install electrical as it relates green environment. In the process of ordering items for educational training from: ASHRAE Photo Voltaic.
Florida Training Services, Inc. GNJ	Jeff McGinley	561-842-1063	Looking at using the NCCER curriculum "Your Role in the Green Environment". This is a LEED Version 3. The course is 15 hours.
United Services Training Corp. GNJ	Mike Hadley	954-975-5300	Have implemented a six hour Solar-Thermal, tankless and heat pump water heating technologies. These are energy efficient and meet the Energy Star ratings. Will also be offering this to the plumbing industry.
Broward County Plumbers & Pipefitters JAC	John D. Harris	954-525-1830	The program is in the process of implementing "Green Awareness" training into Apprenticeship Curriculum. Instructors are being prompted to participate in Training Seminars located at their national headquarters in Ann Arbor, Michigan. In conjunction with Ferris State University, the organization will be pursuing new curriculum in the fields of energy efficiency and conservation.
Dade County Air Conditioning, Refrigeration and	Art Warren	305-685-0311	The program is planning to implement "Green Building Awareness" into curriculum for 4th year apprentices. Part of the curriculum may include topics such as: Intro to Green Building Fundamentals & Improving a Building's Energy Efficiency. The

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE #</b>	<b>Sustainability Efforts</b>
Pipefitting Education Committee JAC			Instructor for these courses has taken courses at The U A Instructor Training Program in Ann Arbor Michigan and is also LEED certified.
Dade County Plumbers JAC	Paul Bithorn	305-822-9411	The program is planning to incorporate a "Green Awareness Certification" course into their curriculum that will be taught to Journeymen, due to the highly technical nature of this certification course. This course will be taught by JAC Instructor who is certified to teach the course. Ninety per cent of the course is related to Air Conditioning. Plumbing related topics that will be included are solar hot water systems as part of their "Water Supply" course as well as water saving plumbing fixtures as part of their "Plumbing Fixtures" course. A course that addresses Grey water systems will be instructed by Florida Plumbing Code Instructor who is a full-time plans examiner for Miami-Dade County and is well versed on the subject. Program is also in the process of scheduling to have the United Association's state-of-the-art Green Awareness trailer brought to their school for an open house event for their contractors and as a teaching aid for their instructors.
Florida East Coast Electrical JATC	John Simmons	954-523-4400	<p>Program is implementing their NJATC approved curriculum for training journeymen in green jobs technologies. The two volume book set covers the following subjects: Green Fundamentals; Photovoltaics; Wind Systems; Programmable Logic Controllers Fuel Cell; Power Quality and Building Automation</p> <p>The NJATC identified these topics as being the core technology used to create electrical systems in green buildings. The green fundamentals chapter is based on the book Green Building Fundamentals by Michael Montoya. It is a practical guide to understanding and applying fundamental sustainable construction practices and the LEED green building rating system.</p> <p>The NJATC apprenticeship curriculum covers Photovoltaics, programmable logic controllers, fuel cells, power quality and building automation. Last year the program increased its emphasis on building automation by incorporating two separate textbooks in the program and teaching the material in the first textbook in our fourth year and the other textbook in the fifth year. Our apprentices are also permitted to attend journeyman training classes. The green fundamentals are currently on program schedule of upcoming continuing education classes.</p>
Housing Authority of the City of Fort Lauderdale INJ	Melissa King	954-467-7818	<p>Program is expanding the Step-Up Apprenticeship Program to incorporate green building and energy efficiency instruction in order to prepare apprentices for the emerging energy efficient and green building construction and retrofit industry. The expansion will provide current and new apprentices with the opportunity to emerge from poverty through training that not only provides instruction in construction and self sufficiency, but offers instruction in emerging technology that allows the apprentices to apply competitively for positions.</p> <p>The current Step-Up program will be expanded to engage participants in green building and energy efficiency. A total of 500 hours out of the 4,000 hours will be dedicated specifically to energy efficiency and green building. The program will incorporate the following new modules:  (1) Sustainable Sites; (2) Energy and Atmosphere; (3) Water Efficiency; (4)</p>



PROGRAM	CONTACT	PHONE #	<i>Sustainability Efforts</i>
			<p>Materials and Resources and (5) Indoor Air Quality.</p> <p><b>(1)</b> The <b>Sustainable Sites</b> Module will be introduced first because it provides a basis for green and sustainable building. Within Sustainable Sites, program participants will learn about selecting and developing sites wisely, reducing emissions associated with transportation, planting sustainable landscapes, protecting surrounding habitats, managing storm water runoff, reducing the heat island effect, and eliminating light pollution. Site plans for residential properties owned and managed by the Housing Authority will be used in the classroom to analyze access to existing roads, water, sewers, and other infrastructure within or contiguous to the development. Vacant lots will be evaluated by the apprentices to verify if new development is at least 100 feet away from wetlands and to identify if any habitats for threatened or endangered species exist on the site.</p> <p>Apprentices will learn about the importance of creating walkways and parking areas that are water-permeable to reduce storm water runoff. Analysis of the location of development within proximity to basic services, densities of units per acre, and access to public transportation will also be included in this module.</p> <p><b>(2)</b> The Energy and Atmosphere Module focuses on the energy performance of buildings. This includes tracking building energy performance (designing, commissioning, and monitoring), managing refrigerants to eliminate CFCs, and using renewable energy. The class will be introduced to commissioning procedures, renewable energy sources, measurement and verification protocol, and Energy Star equipment and improvements that have been made over the last decade in technology. Feasibility of installing renewable energy sources (including a wind turbine and PV panels) will be analyzed.</p> <p><b>(3)</b> The Water Efficiency Module includes monitoring water consumption performance, reducing indoor potable water consumption, reducing water consumption to save energy, and practicing water-efficient landscaping. To conserve water, students will learn how to install low-flow showerheads and kitchen and bathroom faucets. Irrigation practices, with a focus on reducing the amount of potable water used for landscaping will be examined and the students will learn about drip irrigation systems, separately zoned turf and bedding areas, watering zones, and moisture sensors and controllers.</p> <p><b>(4)</b> The Materials and Resources Module focuses on selecting sustainable materials, practicing waste reduction, reusing materials, and recycling. Program participants will learn about building reuse during renovation and the benefits of using certified wood and regional and rapidly renewable materials. The students will develop a construction waste management plan in the classroom for the sites they will be retrofitting in the field.</p>

PROGRAM	CONTACT	PHONE #	<b>Sustainability Efforts</b>
			<p>(5) The Indoor Environmental Quality Module will incorporate lessons in ventilation, managing air contaminants, specifying less harmful materials, allowing occupants to control desired settings, and the benefits of providing day lighting and views. Participants will learn about the difference between conventional paints and sealants and non-VOC (Volatile Organic Compound) paints and sealants. A construction indoor air quality management plan will be developed by the apprentices and issues concerning the controllability of systems (lighting and thermal) along with thermal comfort will be discussed.</p> <p>In addition to the new sustainable modules being added to the coursework, the apprentices will also receive training in energy efficiency and green building in the field. The Housing Authority currently has a total of 580 housing units that are in need of green retrofits. The projects have already been awarded and funded for the retrofits in the total amount of \$41,060,000. These properties will be used as field training locations, as they are in need of weatherization, roof, insulation bathrooms, A/C, water and electric conservation, and native/low water landscape upgrades.</p> <p>The Step-Up Apprentices will be exposed to potential employers in emerging industries. Employers will be invited to the Housing Authority on a monthly basis to provide instruction on green building principles in the classroom and will assist with on-the-job training. For example, Marcell Haywood, President &amp; COO of Dirt Pros EVS, a full service maintenance firm that specializes in integrating sustainable and green building practices, recently ranked as one of the fastest growing private companies in the countries, will advise the HACFL staff on the skills and technical knowledge the apprentices will need to know to prepare them for a position in his company. Mr. Haywood will lecture during the in-classroom training and provide demonstrations in the Step-Up workshop. He expects to increase his workforce by 200 people by this time next year (conservatively) and is willing to arrange for 20% of these new hires to come from the Step-Up Apprenticeship Program. As his company expands, Mr. Haywood has agreed that the 20% can be increased proportionately based upon the success of the program. Similar partnerships have also been established with the following employers: LXR Luxury Resorts &amp; Hotels, Build Green Training &amp; Implementation, Green Profit Solutions, Crosswind Renewable Energy, and IBI Group.</p> <p>In order to encourage higher education, the Housing Authority has created a Step-Up Continuing Education Scholarship Program. The objective of the program is to provide the Step-Up Apprentices with the opportunity to enroll in college courses so they can receive additional training. The participants are required to share the information they learn in the course with other Step-Up apprentices. The focus of the continuing education program is to further advance skills in the construction industry, specifically in energy efficiency and green building.</p> <p>The Step-Up Continuing Education Scholarship Program is offered in both the Fall and Spring Semester of each year and is funded by donations from local</p>

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE #</b>	<b>Sustainability Efforts</b>
			businesses. Last, the Step-Up Apprentices have been given the opportunity to participate in a sustainability planning process by being part of the Housing Authority's Sustainability Committee. The Housing Authority strives to use natural resources efficiently and responsibly and seeks solutions that optimize the balance of positive social, environmental, and fiscal outcomes. The Sustainability Committee is currently working on initiatives, such as, developing sustainable policies and guidelines (i.e. water efficiency, waste reduction and energy efficiency) in order to accomplish this goal.
Independent Electrical Contractors South Florida, Inc. GNJ	Ana Rojas	305-380-9040	Program is implementing curriculum that covers green related topics that relates to their field such a: power quality as well as lighting, transformer and motor efficiency.
Miami Electrical JAC	Bill Riley	305-324-7578	Program is planning to implement "Green Awareness" into training that covers topics such as: Photovoltaics Systems, Green Fundamentals, Power Quality Analysis and Fuel Cells. This training curriculum is anticipated to be available to both apprentices and journeymen (as part of their continuing education criteria).
Plasterers & Cement Masons OPCMIA UTL 930 JATC	Eduard Bauer	954-839-5012	Program is currently utilizing/implementing training curriculum that includes Green methods in working with Concrete such as Pervious Concrete including alternative strategies to create, capture, treat, and discharge storm water.
South Florida Ironworkers LU 272 JATC	Robert Wisehart	954-524-8731	Program is planning to incorporate "green initiatives" into curriculum by demonstrating to apprentices the importance of using recyclable scrap metal in making new steel and it's impact on the environment !Curriculum may also begin to include some suggested alternative methods of dealing with Wastewater sludge from rolling, cooling, descaling, and rinsing operations that may contain cadmium.
South Florida Laborers JATC Local Union 1652	Albert Hutson	305-754-2659	Program is planning to implement curriculum that addresses environmental awareness and weatherization. Training courses will begin to promote "green" activities such as conservation, recycling and utilization of materials.
South Florida Trowel Trades JAC	Mike Canavan	800-246-8048	Program does not anticipate incorporating any changes to their curriculum to include "green trends/initiatives" at this time. In terms of the application process of materials they also do not anticipate any impact.
Florida Air Conditioning Apprenticeship Association GNJ	Kenneth Cook	561-202-7295	Heating and air conditioning systems use approximately 65% of home energy use because of this the program is always training on system installation, service and maintenance to keep equipment operating at peak performance. Apprentices are taught that electronic commutative motor ECM motors out perform permanent split capacitor PSC motors and do so at a fraction of the cost. The program teaches the Air Conditioning Contractors of America fiber glass duct design and quality installation standards. Also, thermostat components are recycled.
Manasota Masonry Apprenticeship GNJ	Dennis Neal	941-926-3155, Ext. 227	Core construction information is being introduced at the preapprentice level via the NCCER book "Your Role In The Green Environment." Preapprentices are being exposed to energy audits at the residential level. This includes an inspection of structure from top to bottom addressing energy and eco issues from insulation, lighting, water conservation, air filtration, appliance efficiency, and even eco friendly landscaping.