



## **Institute of American Indian Art Sustainable Futures Initiative**

### **Greening Charrette Santa Fe, New Mexico**

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S U S T A I N A B L E F E D E R A L F A C I L I T I E S

**I A I A I n i t i a t i v e f o r a S u s t a i n a b l e F u t u r e**

The Institute of American Indian Arts (IAIA), a four year fine arts college in Santa Fe, New Mexico held a two and one-half day Greening Charrette, or interactive planning workshop, on March 12-14, 2003 to guide the renovation of the IAIA Museum and development of the IAIA campus in the direction of environmental sustainability. Through a series of presentations and brainstorming sessions around specific issues including energy efficiency, indoor environmental quality, and sustainable water use and landscaping, approximately 63 members of the local community, stakeholders, IAIA faculty, students and staff, and state and federal agencies worked together to develop a framework for carrying these goals for sustainable development into the future.



This charrette was funded through the “Sustainable Federal Facilities” program developed by the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy (Federal Energy Management Program and the National Renewable Energy Laboratory), with support from the IAIA Foundation and Public Service Co of New Mexico.

### **Charrette Highlights**

Charrette participants identified a number of short, medium and long-term action items intended to move the Initiative forward. First steps, and key “champions” are to:

1. Conduct a multi-disciplinary planning meeting as soon as Lifelong Learning Center (LLC) team has been identified to establish (prototype) guidelines for design and construction. (David Aigner/Paul Fragua, IAIA)
2. Establish a data base of literature, data and manufacturers of green construction and art supply products. (Paul Fragua, IAIA)
3. Provide a third party review of Library and Technology Center (LTC) design to identify low cost efficiency improvements. (David Aigner/Paul Fragua, IAIA)
4. Develop the infrastructure and framework for data collection and analysis, commissioning and performance monitoring, including conducting a baseline energy and water use audit of the campus and Museum, sub-metering of all buildings, and developing a campus-wide energy management system. (Margaret Janis/Dave Aigner, IAIA)
5. Assess water sources and uses, and implement a water reduction program for the main campus and the museum. (Margaret Janis, IAIA)
6. Develop the garden/landscape component of the campus development program, ensuring that the landscape is developed as an expression of native culture, and in such a way that it supports curriculum development and campus community life.(Margaret Janis, IAIA)

*“An ancient pathway to a new direction... A model for the planet”*

*-John EagleDay, IAIA*

# IAIA Initiative for a Sustainable Future

## CHARRETTE OVERVIEW: PRIMARY OBJECTIVES

The Initiative for a Sustainable Future will provide the vision of a sustainable future to guide all IAIA facility development, including renovation of existing buildings, design and construction of new buildings, facility operations and maintenance, campus land use and outdoor recreation. The *primary objectives* developed in the greening charrette are a catalyst for this Initiative. In her opening remarks, Della Warrior, President of the IAIA gave her full support and commitment to carrying out these objectives, which include:



### Site/ Master Planning

- Achieve water independence
- Develop the landscape as an expression of cultural identity and a functional living environment
- Increase biodiversity through restoration of plant and animal communities and limit use of non-native plants to specific landscape zones and micro-climates

### Energy Use

- Reduce energy use by 60% for new buildings, and 30% for existing buildings
- Optimize use of renewable energy sources
- Reduce (from baseline) embodied energy in all building materials by 15%

### Indoor Environmental Quality

- Develop master plan element and guidelines for interior or constructed spaces
- Establish definition of and criteria for ongoing team integration in the design process
- Establish standard for an educational component integrated in and communicated through the building design

### Benefits

- Emphasis on educational value of traditional Native American principles of sustainability
- Reduced operating costs
- Reduced resource consumption
- Reduced site disturbance/site restoration
- Health and productivity of students, faculty and staff
- Increased quality of life for community
- Positive contribution to the surrounding natural environment and community
- Leadership in Native American education related to the principles of sustainable development



*“When we walk upon Mother Earth we always plant our feet carefully because we know the faces of our future generations are looking up at us from beneath the ground. We never forget them.”*

*- Oren Lyons*

## Charrette Overview

The IAIA Greening Charrette was the thirteenth supported by DOE at a federal facility. Since the first federal Greening Charrette, done for the White House in 1992, DOE has sponsored Charrettes for National Parks, the Pentagon, military bases and other federal facilities but the IAIA Charrette was the first supported by DOE for an educational institution and the first for a Native American institution. With financial and technical support for the Charrette from the Federal Energy Management Program, IAIA assembled an outstanding group of IAIA participants, subject area experts, facilitators and partners to develop the strategic plan for IAIA's Initiative for a Sustainable Future.

## History Of The IAIA Master Plan and The Initiative For a Sustainable Future

*The Vision in 1993: [A] place which reflects the importance of maintaining traditional Native American values: the respect for the land; the belief in our bodies as the temples of our souls; and the continuity of our tribal codes into the next generation. Here we will build a place for fostering and nurturing cultural traditions and teachings. Here we will build a place where a strong hand gently grasps an older, weathered hand of our grandparents. IAIA Campus Master Plan, June 1993*

The Initiative for a Sustainable Future is an outgrowth of a planning effort that began over ten years ago, when a group of faculty, staff, alumni, students and trustees developed a vision for the IAIA, its campus and its facilities. The report, published in 1993, laid out the vision for the Institute, and extended the vision to the development of the campus. The 1993 master plan vision continues to be valid today, and sums up equally well the vision of the Initiative for a Sustainable Future.

Ten years after the first campus master plan was developed, IAIA is nearing the end of Phase 1 construction. As it enters Phase 2 construction, IAIA is considering ways of developing campus open space, and is planning for renovation of the Museum and Academic Center as well. In 2003, IAIA faces new realities that were not envisioned in 1993 and that require rethinking of the master plan. For instance:

- The cost of the original master plan was too high to be implemented
- Little of the infrastructure envisioned has been built yet, except that which was necessary for circulation and to make the buildings function
- The first buildings were built on a shoestring and are not energy efficient.
- Some buildings do not function optimally for the purpose they are serving or for occupant comfort

- Campus development has been slower than envisioned
- The economic situation is very different, and funding is harder to come by
- Fresh water and fossil-fuel based energy are scarcer and the global impact of pollution is better understood
- Water availability is critical to continuing development in Santa Fe Coun

Despite these new realities, IAIA can still carry out the original vision but may need to do it in different ways. IAIA now has an opportunity that will not come again to develop the campus and its facilities in a way that will embody the IAIA vision of a sustainable campus environment. The IAIA Charrette provided an opportunity to develop partnerships, identify specific goals and flesh out the strategic plan to build a sustainable future for IAIA.

## The IAIA Vision for a Sustainable Future

Native American people have applied sustainable principles for many centuries. In fact, many would argue that sustainability was invented by Native Americans. The concept is deeply embedded in Native American cultures, religious practices and languages. Thus, IAIA views the creation of an energy- and water-conserving, environmentally responsible campus and a sustainable future as a natural extension of its legacy as a leader in Native American education, cultural preservation and teaching.

To ensure that the IAIA experience in developing its Initiative for a Sustainable Future is accessible to Native American communities, its partners and the general public, IAIA conveyed to the Charrette participants the importance of creating a “living” sustainable environment on campus. IAIA intends to find many opportunities to teach IAIA staff, students, visitors, and the community by creating a living workshop of environmental responsibility and sustainability, as well as through elements of the formal curriculum.

*It's about a total experience. As (students) come and live here, go to class here, play here, we are providing a total living environment. So the environment itself will teach*  
(Paul Fragua, Project Coordinator for Campus Development)

## Charrette Participants and Workgroups

Sixty-five people representing a broad spectrum of professional fields and organizations participated in the Charrette. These included:

- IAIA students, faculty and staff many of whom also represent tribes (24)
- The US Department of Energy and Labs, the US Forest Service, the New Mexico Energy Conservation and Management Division, State Engineer's Office (7)
- Local tribes and pueblos, and the Santa Fe Indian School (3)
- The Public Service Company of New Mexico (PNM) (2)
- Community organizations (5)
- Architects, landscape architects, water system planners, engineers, environmental advocates, agricultural experts, financial and funding experts (22)
- The press (2)



The Charrette offered this diverse group of participants a unique opportunity to dream big and express their. Ideas large and small were raised and discussed. Three work groups were convened during the Charrette to address issues related to the energy, indoor environmental quality and the campus and site (including water use).

## Charrette Goals

The IAIA Charrette focused on five goals in order to propel the IAIA and its partners toward the ultimate vision of creating a “living workshop of sustainability” at its facilities:

- Provide basic training regarding the concepts and importance of high performance sustainable design to enable attendees to participate effectively in the process
- Identify realistic and economically viable high performance goals, objectives, and potential strategies for IAIA’s built environment in each topic area (campus/site design, energy use, indoor environmental quality)
- Identify the issues and challenges that will affect implementation of these goals
- Build ownership and buy-in among the participants, stakeholders, and community
- Establish “next steps” and logical processes to move the Initiative forward

## Charrette Results

**Objectives** - Charrette participants developed new and more definitive objectives in design integration, campus and site design, energy use, indoor environmental quality, and long-term sustainability. Achieving the most important objectives will establish IAIA as a leader in sustainable facility development and in Native American education related to sustainable development. These objectives are to:

- Achieve water independence
- Reduce energy use by 60% for new buildings, and by 30% for existing buildings
- Optimize the use of renewable energy
- Reduce (from baseline) embodied energy in all building materials by 15%<sup>1</sup>
- Establish an educational component of the Initiative that is integrated into and communicated through the building design (for instance, having digital displays in buildings that continuously show energy use) and emphasizes the value of traditional Native American principles of sustainability
- Increase the health and productivity of students, faculty and staff and the quality of life for the entire community through long-term positive contributions to the surrounding natural environment
- Develop the landscape as an expression of cultural identity
- Continue to limit the built land area on the campus by clustering buildings

*[It is] an ancient pathway  
to a new direction. John  
EagleDay, IAIA Faculty*

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<sup>1</sup> Embodied energy is the energy used to create a product or make a resource such as clean water available.

- Plan open space development to minimize site disturbance and improve the health of the land through increased biodiversity, land restoration, and restoration of indigenous plant and animal communities.

Participants also set objectives related to the process including:

- Develop a multidisciplinary team to create, implement, and review the high performance goals, initiatives, and strategies of the IAIA Initiative for a Sustainable Future
- Continuously focus on the overall objectives and vision, set goals, take action, and evaluate the actions taken
- Assign “champions” to “own” and be responsible for the objectives, initiatives, and strategies
- Use a whole systems approach – engage all parties to think in terms of integration
- Establish a mechanism for data collection and feedback and share this information.

**Immediate Action Items** - Each workgroup identified specific actions to achieve the objectives. These are:

#### ***Site and Campus***

- Assess water sources and uses, and implement a water reduction program. Include the off-campus IAIA Museum as a part of this assessment
- Develop the garden and landscape component of the LLC program, ensuring that the landscape is developed as an expression of Native American culture and in such a way that it supports curriculum development and campus and community life
- Prepare an overall site analysis and landscape and ecological characterization of the existing campus and vicinity.

#### ***Energy***

- Use the U.S. Green Building Council’s LEED process to generate guidelines for IAIA
- Ensure that builders understand and agree with sustainability goals from the beginning
- Establish a baseline of energy use for existing buildings.

#### ***Indoor Environmental Quality***

- Identify a multi-disciplinary team to plan the sustainable elements of the design of the LLC
- Conduct project brainstorming session with the entire LLC team to elaborate on guidelines
- Document the LLC process as IAIA’s prototype sustainable project
- Compile green product information to facilitate green product use in the LLC.<sup>2</sup>

**Challenges** - Charrette participants identified general challenges that IAIA will face in implementing the Initiative for a Sustainable Future, as well as specific challenges in each topic area. Some of the challenges are:

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<sup>2</sup> GreenSpec is recommended as a starting point and can be obtained at [www. BuildingGreen.com](http://www.BuildingGreen.com)

### ***General***

- Cost of planning and capital investments
- Regulatory roadblocks
- IAIA and community buy-in
- Integration of IAIA programs and activities with sustainability goals

### ***Campus and Site Design***

- Current water rights agreements and contracts for delivery and treatment
- Permitting for digging wells for water management
- An integrated plan and committee to guide landscape development on the IAIA campus, and in the context of the broader community.

### ***Energy***

- PNM interconnection requirements for self-generators
- Existing energy use/efficiency and maintenance costs
- Non-CFC coolants vs. energy use.

### ***Indoor Environmental Quality***

- IAIA planning teams not familiar with green and non-toxic products
- Need for paradigm shift -- managing differing values and judgments
- Comfort and optimal indoor environmental quality may require an increase in energy use.

**Success Factors** - The workgroups identified factors that can serve as benchmarks for success – activities, events or products that signify that goals are being achieved and overall objectives are being met. Examples include:

### ***General***

- Increased buy-in and participation from the IAIA community
- Increased outside interest, partnerships, and funding
- Increased excitement of staff, students, visitors, and community.

### ***Campus and site design***

- A vision for water use is established and student and staff are aware of this vision
- Education is related to sustainability practices and subsequent behavior modification<sup>3</sup>
- The overall building footprint is minimized while open space setting is maximized.

### ***Energy Use***

- Systems are used that are easy to maintain and operate
- Clear, detailed construction documents are produced
- Operating staff are trained in systems.
- Compliance tools are used to inform designers and owners of building performance.

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<sup>3</sup> Programs such as the National Wildlife Federation's Campus Green Program ([www.nwf.org](http://www.nwf.org)) are useful.



### ***Indoor Environmental Quality***

- Green campus guidelines are developed and used
- Connections with green suppliers and manufacturers are made
- LLC specifications and drawings reflect green guidelines.

***New Partners*** - Through the Charrette, IAIA introduced several new partners to IAIA, its history, and vision. In return, participants from community organizations such as Seeds of Change, the Traditional Native American Farmers Association, Santa Fe Botanical Gardens and other organizations provided critical expertise and insights during the Charrette in the areas of land design, restoration, native vegetation and crops, energy efficient design and renewable energy. Charrette participants also identified other potential partners and stakeholders who did not attend the Charrette but who should be informed about and involved in the Initiative for a Sustainable Future. These include:

- Rancho Viejo Partnership
- USDA Agricultural Extension representatives
- County planners
- Biomass experts
- Green material suppliers and manufacturers
- Contractors

***Next Steps*** - Many action items, both long and short term were identified during the Charrette.

*What better way to carry out IAIA's vision than by developing the campus and facilities in a way that respects the natural resources we have been given and are about to use, and, in the end, enables us to walk gently on our earth?*  
(Margaret Janis, Program Manager for the IAIA Initiative for a Sustainable Future)

Those requiring immediate action include:

- Developing funding for planning and capital investments
- Taking immediate steps to increase energy efficiency in the LTC (currently under construction)
- Meeting with objective and action item “champions” to check on progress on short-term actions
- Continuing to engage the IAIA community and outside partners in the IAIA Initiative for a Sustainable Future to develop long-term buy-in.

## **Conclusion**

The Charrette has enabled IAIA to better define goals and objectives, identify partners, challenges, and funding needs and assign responsibility for the achievement of objectives related to the Initiative for a Sustainable Future. Through the Charrette, IAIA has created an action plan to move the Initiative forward. The Charrette was instrumental in achieving collaborative agreement and buy-in from all participants for both the overall vision of a “living workshop of sustainability” and for a framework of definitive goals and objectives to bring that vision to fruition.

*In our way of life, in our government, with every decision we make, we always keep in mind the Seventh Generation to come. It's our job to see that the people coming ahead, the generations still unborn, have a world no worse than ours -- and hopefully better. When we walk upon Mother Earth we always plant our feet carefully because we know the faces of our future generations are looking up at us from beneath the ground. We never forget them.*  
Oren Lyons, The Onondaga Faithkeeper, from Wisdom of the Ages, by Wayne W. Dyer, p. 116.

