

## **Advancing High Performance School Design and Construction In New England and Atlantic Canada**

### **A Summary of the Henry P. Kendall Foundation's Role and Plans**

For the web conference meeting of the  
Northeast States Pollution Prevention Roundtable of the  
Northeast Waste Management Officials' Association

Tuesday, March 30, 2004 -- 10:00 AM

## **Background**

- ⌘ Climate change is among the Kendall Foundation's central program themes in the northeastern United States and Atlantic Canada.
- ⌘ Since 1998 the Foundation has worked to develop a civil society approach to climate change solutions.
- ⌘ The Foundation seeks to demonstrate that reductions in greenhouse gas emissions are:
  - ⌘ Technically feasible
  - ⌘ Economically beneficial
  - ⌘ Politically palatable

## **The importance of buildings**

- ⌘ Current analyses generally agree that:
  - ⌘ Building of all kinds – residential, commercial, industrial – account for nearly half of all greenhouse gas emissions in the United States and Canada.
  - ⌘ The burning of fossil fuels is leaving a climate change legacy that must be addressed systematically and purposefully
- ⌘ In response, the Kendall Foundation has chosen to advance the high performance schools agenda in the region that includes New England and Atlantic Canada.

## **Why Schools?**

- ⌘ Schools are at the centers of their communities
  - ⌘ Schools are noticed and their progress is followed by most members of the community.
  - ⌘ Schools often serve many local purposes in addition to education, providing a sort of “social glue” and focal point for the community.
  - ⌘ High performance school facilities provide compelling examples for others considering new construction or renovation.
  - ⌘ High performance schools reduce greenhouse gas emissions and can be the leading edge of a transition, community by community, to sustainable building stock.

## **High performance schools**

- ⌘ The Kendall Foundation is now creating a long-term program to support energy-efficient, healthy, sustainable, “green” – HIGH PERFORMANCE – school facilities in New England and Atlantic Canada
- ⌘ High performance schools are characterized by:

## **1. Sustainability**

### **Integrating:**

- ⌘ Energy conservation,
- ⌘ Renewable energy strategies,
- ⌘ High performance mechanical and lighting systems,
- ⌘ Environmentally responsive site planning,
- ⌘ Environmentally preferable materials, and
- ⌘ Water efficient design.

## 2. Healthy and productive space ...

... for students and teachers, providing:

- ? High levels of thermal, acoustic, and visual comfort;
- ? Large amounts of natural daylight;
- ? Superior indoor air quality; and
- ? A safe and secure environment

## 3. Cost effective O & M ...

... utilizing:

- ? Energy analysis design tools that optimize energy performance.
- ? A life cycle cost approach that reduces the total costs of ownership.
- ? A commissioning process that ensures the facility will operate in a manner consistent with design intent.

## Other benefits:

High performance schools can also:

- ? Enhance academic performance and achievement.
- ? Improve student and teacher attendance.
- ? Educate students and community members about the value and practice of making sustainable decisions in their own lives.

## What the Foundation has done: 1

- ≍ Contracted with Coordinators in each state and province to:
  - ≍ Study and report on the current school design and construction process.
  - ≍ Identify opportunities – intervention points in that process – for implementing high performance techniques / practices.

## What the Foundation has done: 2

- ≍ Held a regional meeting of key players from each state and province to:
  - ≍ Review and integrate the study results.
  - ≍ Begin charting a course of action and involvement.
  - ≍ Expand and strengthen the high performance schools network.

## What the Foundation has done: 3

- ≍ Conducted one-on-one phone conversations with meeting participants to:
  - ≍ Identify areas of common need and possible activity.
  - ≍ Elicit ideas for next steps, regionally and in each jurisdiction.

### What did we learn?

The key intervention activities to achieve high performance school facility outcomes are:

1. Outreach education for school decision-makers.
2. Coaching and technical support and assistance for HP school implementers.
3. Technical continuing education for the professional design, engineering, and construction communities.

### Key intervention activities (cont'd)

4. Support for a hub and clearinghouse and organizing point for the regional network of stakeholders in the high performance school arena.
5. Identification of and support for necessary and appropriate policy changes in each jurisdiction.
6. Expansion of the funding and collaboration network.

### Focus on policy implications ...

There are some crucial next steps in the policy arena:

1. Define "high performance" in laws and rules. Collaboration among jurisdictions will be necessary to establish common regional standards.
2. Establish mandatory minimum standards for receipt of state school building aid.

### Focus on policy (cont'd)

3. Provide monetary and other incentives for doing better than the minimum standards.
4. Bring high performance design money FORWARD in the school building aid process.
5. Cover the cost of a "coach" position for school districts in the school building aid formula.
6. Make life cycle cost analysis and building commissioning mandatory for receipt of school building aid.

### Summary of activities in states

- ✦ CT – action at NGO and district levels, needs more collaboration with state government
- ✦ ME – implementing "20% better than ASHRAE" standard; good interagency collaboration
- ✦ MA – implementing MA-CHPS, monitoring pilot school projects
- ✦ NH – active legislative work, leadership from Office of School Building Aid
- ✦ RI – action at NGO and district levels, needs more collaboration with state government
- ✦ VT – good government interagency collaboration, NGOs active, seeking to establish HP incentives

### Contacts:

Kirk Stone  
Consultant to the Kendall Foundation  
PO Box 904  
Concord, NH 03302-0904  
603-226-6693  
[kirkstone@comcast.net](mailto:kirkstone@comcast.net)

The Henry P. Kendall Foundation  
176 Federal Street  
Boston, MA 02110  
617-951-2525  
[www.kendall.org](http://www.kendall.org)