



BUILDINGS AND APPLIANCES TASK FORCE

7th Meeting

8-10 April, 2009

New Delhi, India

**Harmonization of test procedure -
Energy recovery Ventilator
(Air-to-Air energy recovery)**

Jun Choi

Project Leader

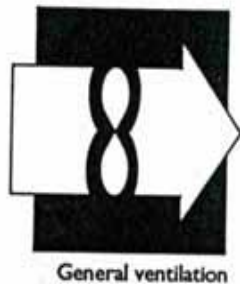
Project Summary

- **Project Objective**
 - Develop methodology for arriving at test procedures that measure product energy efficiency and/or energy consumption that are harmonized among the participant countries and could be adopted by other countries
- **Project Elements**
 - Four working groups
 - Motors, Lighting, HVAC/refrigeration, and Electronics
 - Under HVAC/refrigeration
 - Energy Recovery Ventilator



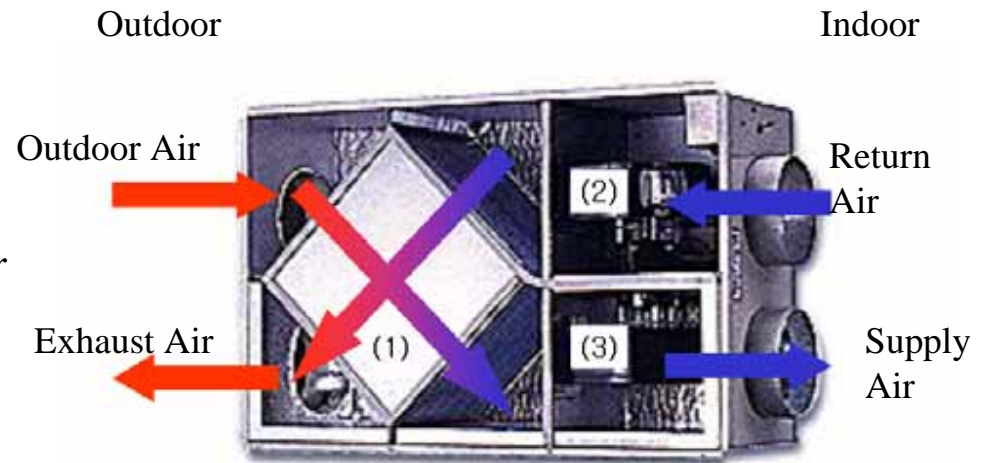
What is ERV ?

- **Natural Ventilation**
 - Unobstructed openable ventilation
 - Protection from weather and insects
 - Screening
- **Mechanical Ventilation**
 - Energy saving & ventilation



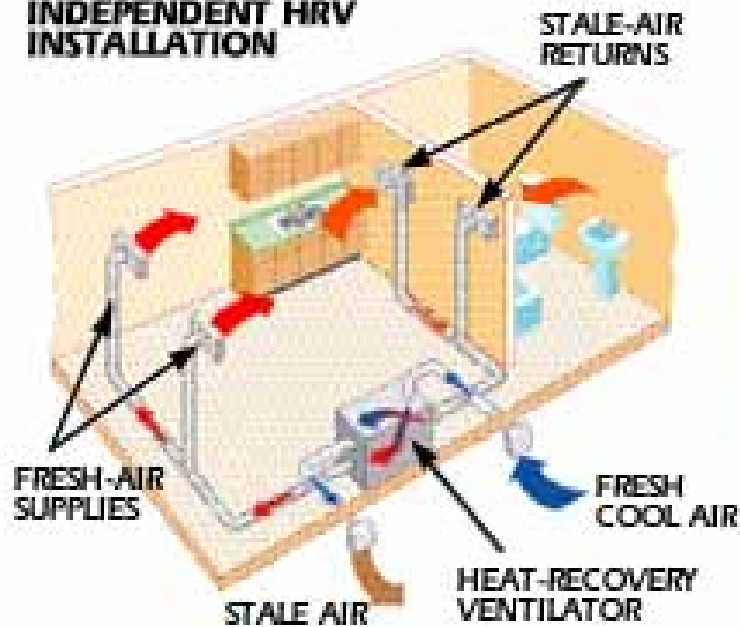
● Heat/Energy Recovery Ventilator

- *Air-to-Air energy recovery*
- *Heat recovery components and packaged energy recovery ventilation units which employ air-to-air heat exchangers to recover energy from exhaust air for the purpose of preconditioning outdoor air prior to supplying the conditioned air to the space, either directly or as part of an air conditioning (to include air heating, air cooling, air circulating, air cleaning, humidifying and dehumidifying) system in assembled in factory.*

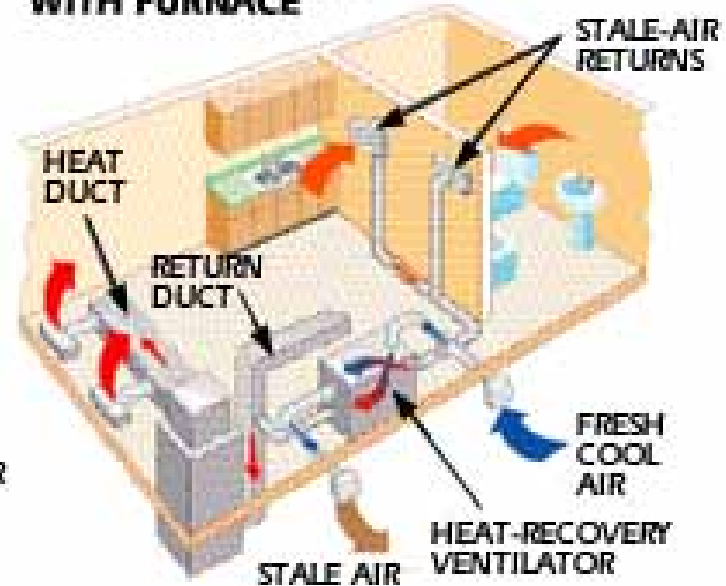


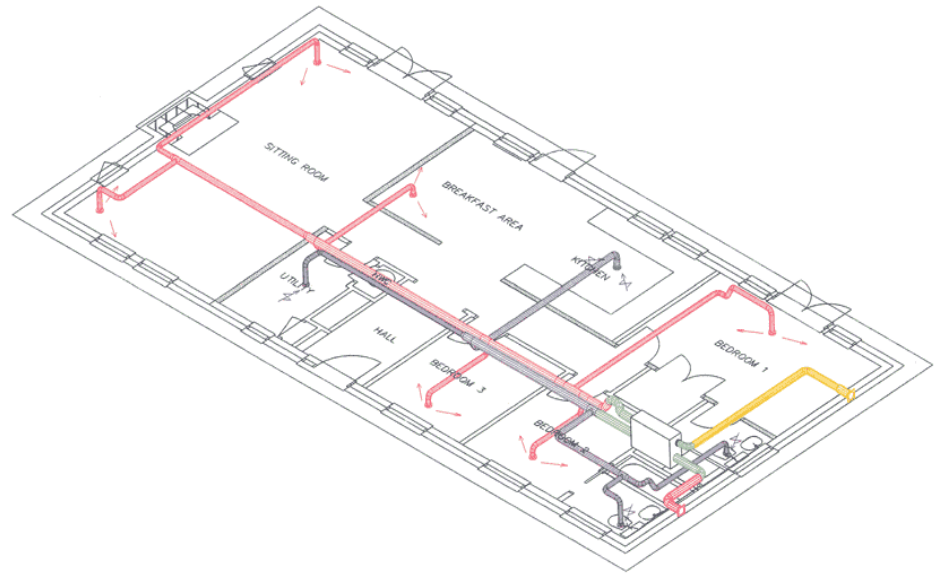
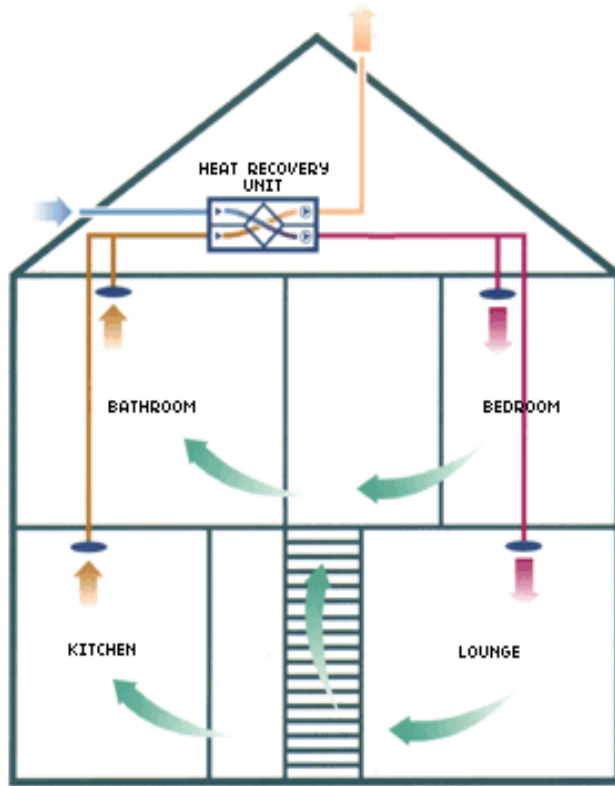
Installation

INDEPENDENT HRV INSTALLATION



HRV INSTALLATION WITH FURNACE





Local Test Standards

- EN 13141 Ventilation for buildings — Performance testing of components/products for residential ventilation
- C439-00 Standard laboratory methods of test for rating the performance of heat/energy-recovery ventilator
- UL 1812 Ducted heat Recovery Ventilator
- UL 1815 Nonducted heat Recovery Ventilator
- ARI 1060 Rating air-to-air energy recovery ventilator equipment
- ASHRAE Standard 84 Rating air-to-air energy recovery ventilator equipment
- JIS B 8628 Air-to-air heat exchanger
- KS B 6879-2003 , “Heat Recovery Ventilator ”
- But, no International Standards



ISO TC 86 SC6 – NWIP

- **Background**

- ISO TC86 SC6 WG10 proposed to develop a new standard in 2007

- **Title**

- Method of Test for the Performance of Heat Recovery Ventilators and Energy Recovery Ventilators.

- **Scope & Purpose**

- This standard prescribes a method of testing the ventilation and energy related performance of Heat Recovery Ventilators and Energy Recovery Ventilators.
- The purpose of this standard is to provide a standardized method of test to obtain the data necessary to calculate the energy related performance of Heat Recovery Ventilators and Energy Recovery Ventilators.

- **Participants**

- Canada(CSA), Japan(JRAIA), Korea(KATS), US(AHRI), some european countries (Italy, France, Sweden)

New Proposal

- **Goals and Objective**

- To develop an International standard for arriving at test procedures that measure product performance that are harmonized among the APP countries, recognized as such by manufacturers, and could be adopted by other countries interested in developing regulatory standards for Energy Recovery Ventilator
- To develop harmonized test procedures for Energy Recovery Ventilator
- To amass testing results using the harmonized test procedure for Heat Recovery Ventilator
- To derive a series of performance rating from the testing results for this product
- To ensure cooperation between ISO and APP on ERV

- **Participation and Management**

- Canada, Japan, Korea, US (China, India possible)
- Lead : Korea, Jun Choi

- **Project Deliverables**

- Report on developing test procedures and programs for this product
- Evaluate the methodological problems with differences in test procedures
- Develop a new test procedure for energy efficiency
- Summarizing the methodological issue and set concrete to identification of the best practices with harmonization of test procedures;
- Recommend to standards-setting agency or by an international agency such as the ISO
- When it is necessary, to examined draft of new or revised test procedure (Final new or revised test procedure)
- Database of testing results using harmonized test procedure and existing test procedures
- Possible performance levels for mandatory and/or voluntary programs
- Document describing process



- Project Milestone**

Sub-project	Step-1												
	2009				2010				2011				
	1	2	3	4	1	2	3	4	1	2	3	4	
Organize Working group for ERV	■												
Gather information on existing test procedures and mandatory/voluntary programs and evaluate			■										
Either revise existing procedures or draft new test procedures and circulate new and existing test procedures for review			■										
Finalize test procedures, circulate new and existing test procedures to respective industries for testing of ERV					■								
Amass data for original group of ERV			■										
Complete market research of ERV					■								
Participate in ISO WG	■		■		■		■		■		■		





**ASIA PACIFIC PARTNERSHIP ON CLEAN DEVELOPMENT & CLIMATE
BUILDINGS AND APPLIANCES TASK FORCE
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