

APCBC

**Asia Pacific Conference on
Building Commissioning**

2007.10.26

Opening Address

**Breaking-through the Narrow Path
to Commissioning Process for a
Wide View**



/ NESTEC

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Progress of APCBC

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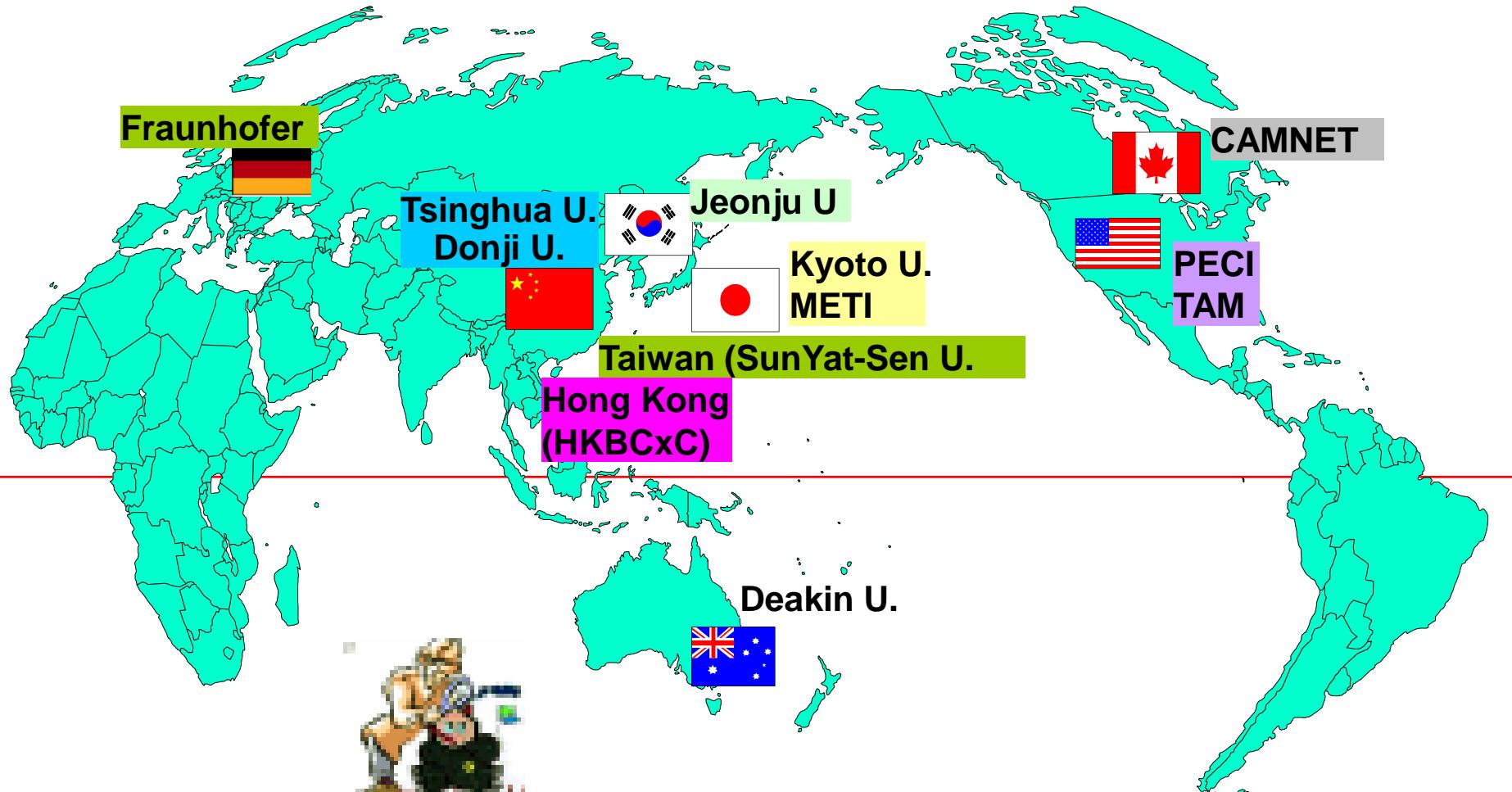
- **March 1995: Pan Pacific Symposium on Building and Urban Environmental Conditioning in Asian District, Nagoya U.**
- **August 2002: Mr. Wong (HK) visited Nakahara (Japan) to set up cooperative relationship on Building Commissioning**
- **April 2003: International Short Symposium on HVAC Commissioning / Annex 40 Kyoto meeting**
- **October 2003, ISHVAC-03, Tsinghua U., Key-notes**
 - **Study and Practice on HVAC System Commissioning, NN**
- **October 2004: ICEBO-04 / Annex40, Paris**
 - **JAPANESE VISION OF COMMISSIONING PROCESS AND ASIAN VIEW, NN**
- **April 2006, NCBC-06, San Francisco**
 - **Promoting Commissioning Process in Japan, Nakahara**
- **November 2006, APCBC-06 / ICEBO-06 / Annex47**
- **May 2007, NCBC-07, Chicago**
 - **Overview on Activity of Building Commissioning in Asia and Japan, Shimazu and NN**
- **October 2007, APCBC-07 (Workshop) / Annex47, Kyoto**

World Commissioning History World / Asia Asia

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- **1960s TAB Activ. started, USA**
CIBSE Code on Cx, UK
- **1979 ASHRAE Symp. on TAB**
- **1986 ASHRAE Symp. On Cx.**
- **1988 First SIBSE Code in UK**
- **1989 First AHRAE Cx Guide**
- **1991 Annex25, BOFD**
- **1993 First NCBC held, PECL**
- **1995 Annex34, BOFD Demo**
- **1996 ASHRAE New Cx Guide**
- **1999 BCA (US) established**
- **2000 Annex40, HVAC Cx**
- **2003 UK Cx Code M issued**
- **2005 ASHRAE/NIBS Cx Process**
200X-0 issued
Annex47, Retro-Cx, etc
- **2006 ICEBO 2006 (Shenzhen)**
- **1980s (HK) TAB/Cx Activity started**
- **1987 (J), First introduction of Cx**
- **1991 (J,C) Annex25**
- **1995 (J, HK) Annex34**
- **1997 (J) Cx Activity started**
- **1998 (J) First Cx Guide Draft**
- **2000 (J, HK) Annex40 participation**
(J) **First Application of ICx**
- **2003 (TW) TAB/Cx began to work**
- **2004 (J) BSCA established**
(HK) **HKBCxC established**
- **2005 (J) Cx Guideline issued**
- **2006 APCBC 2006.11 (Shenzhen)**
(TW) **Cx Guideline (to be issued)**

Today's Participants as Reporters



Annex 47 Participants

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Brief Summary of Asian Cx Status

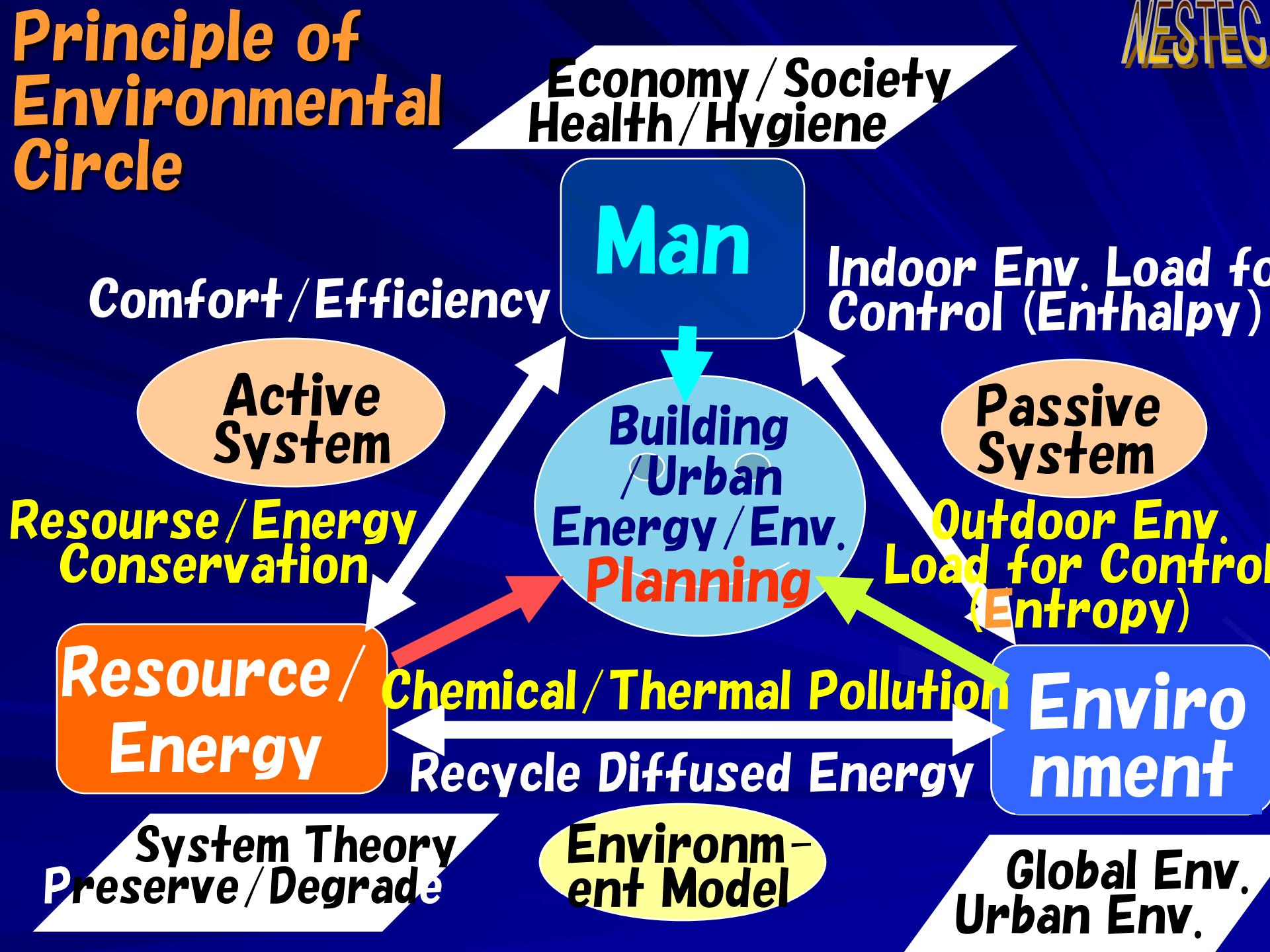
(In view of Initial Cx Process for New Buildings)

- **Japan: Voluntary development continues.**
 - SHASE and BSCA lead. Yet no true Cx providers are. **BSCA struggles for qualification and establishing Cx platform and business model.**
- **China: Researching Status (like Tsinghua, HKIT Us.)**
 - HK: HKBCxC active for Training and Qualification:
 - Case Studies Large Commercial buildings, R&D involved
- **Taiwan: TAB & Cx using BEMS mandatory for Public Buildings**
- **Korea: Researching Status except for actual Cx application to Foreign funded building construction**
- **Singapore: said US provider doing business**

Philosophical / Ethical Background of Building Commissioning

- **Mechanism of Urban Environment State Change**
 - Virtual/Vicious Circle of Man-Environment-Resource/Energy
- Principle of Energy Conservation
- Recognize the Big Effect of Commissioning Process from Program to Maintenance
- Proper and Unbiased Evaluation System for Energy / Environment / Sustainability

Principle of Environmental Circle



Energy Conservation Principle

Reflection

Deliberation

察 省 ENERGY

High Efficiency

Renewable Energy

Energy Recycle

Proper Evaluation

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Limited Ener./Resour.

Energy Use Pattern

Global Env. Pollution

Urban Environment

Save

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Demand Control

Optimization

Humanism

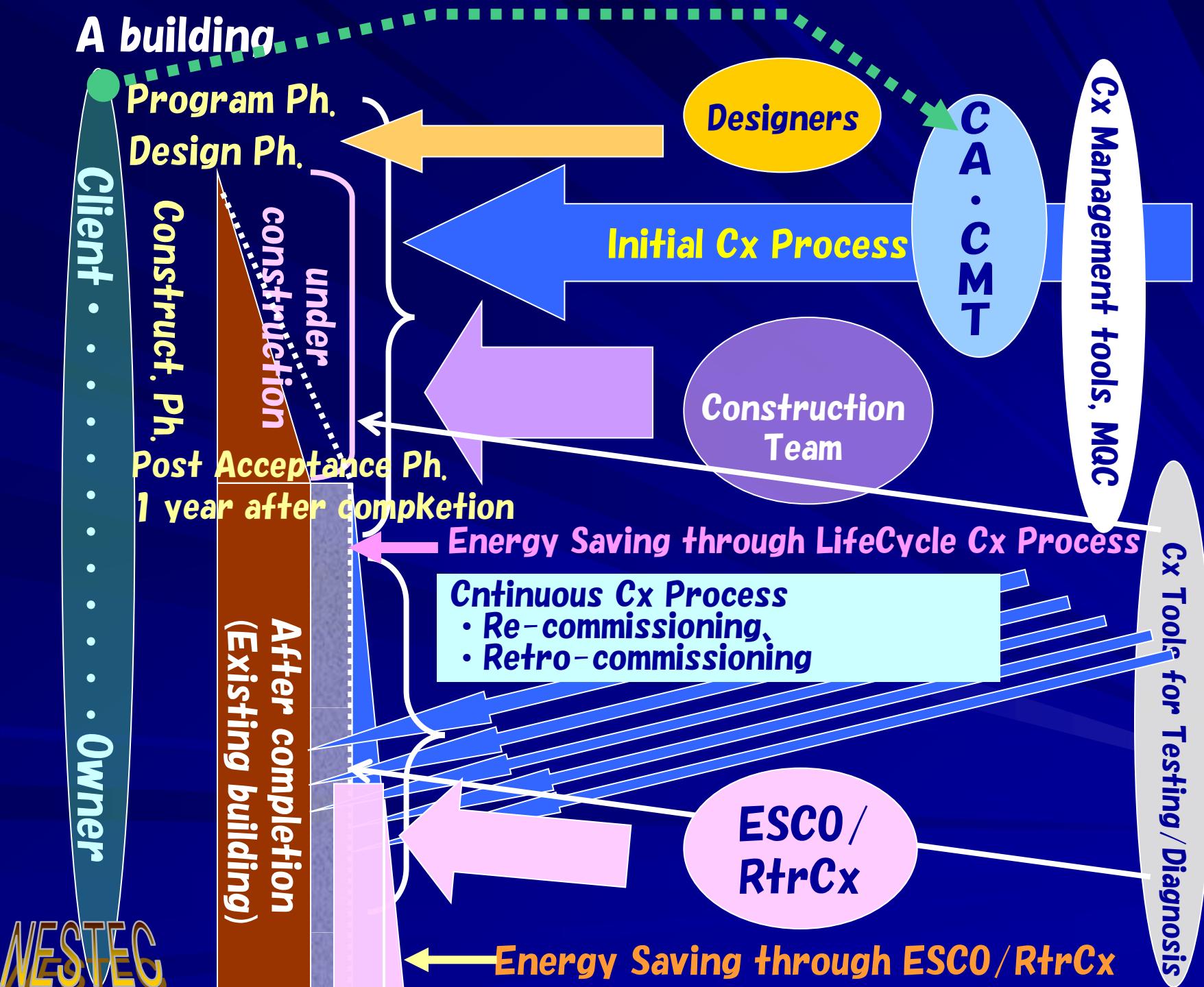
Maintenance / Moral

Commissioning Application

- **Life Cycle Commissioning**
- **Initial Commissioning**
 - **Total Initial Commissioning**
 - **Partial Initial Commissioning**

not recommended but better than nothing
- **Ex1 : Acceptance Step Commissioning**
- **Ex2 : Program Phase Commissioning (Consulting)**
- **Ex3: Construction Phase Commisioning**
- **Retro- Commissioning**
- **Continuous (On-going) Commissioning**

Lifetime Commissioning Process



Points of Discussion

How to meet the different culture and customs lied in the construction industry of each country ?

■ **Owners' recognition on**

- how important the OPR is,
- how human beings could not be totally reliable as the social beings, if not as the natural beings, - - - -
- difference of religious and ideological background

■ **Allowable design quality**

- how severely designers are sued for their design mistakes, when with or without OPR,
- Vague discrimination among conceptual design, schematic design and design development

Points of Discussion – continued

How to meet the different culture and customs lied in the construction industry of each country ?

- **How design profession and CA qualification could harmonize without fight for optimality of the design under OPR**
- **How TAB and FPT could efficiently harmonize in the end to realize OPR**
 - Difference of the custom and expected performance of TAB among countries
 - How owners could endure the delay of acceptance due to implementation of sufficient TAB and FPT

Commissioning Authority (CA)

- **Nominated and paid directly by the owner.**
 - **How owners could have knowledge on CA?**
- **Individuals or organizations which are socially acknowledged as a bearer of fair mind with sufficient professional Knowledge and management capability.**
 - **How can this god-like governor is obtained or qualified?**
- **The third personality concerning the project in concern**
- **Preferably, standing-alone professional independent from design team and construction team**

Merit of Commissioning —to be obtained

For Building Owners:

- Building truly match Owner's Requirements
- Realize high quality products and maintenance
 - How come owner just evaluate cost & appearance?
- Contribution to Facility Management
- Obtain cost efficient building through lifetime
- Satisfactory room environment
- Add value to real-estate
 - How curious Engineering Report do not evaluate quality of energy & environment!
- Reasonable rent
- Satisfaction through energy conservation and contribution to global environment

Merit of Commissioning –continued —to be obtained

For Design Professionals:

- Raises quality of design
 - While they'll need more time that owners hate
- Clarify roles and responsibility of designer
 - And yet, how come if owners don't evaluate it?
- Economical merits
 - Fair amount of fee deserving its quality
 - Reduced troubles
 - Cost effective design
 - They'll still say that owners wish the lower price, neglecting the effect on the worsen? quality.
- Raised fame as design professional
- Act as CA based on their experience

Merit of Commissioning —continued —to be obtained

For Contractors:

- Clarify Scope of TAB
 - ex. Japan Situation is far behind US & UK experience of TAB & Cx Codes of practice setup during 1965~1995
- Reduce Troubles during construction and after occupancy
- Economical Merit
 - Clarified scope and responsibility for TAB and Cx-related works
 - Reduce risks for trouble solution expense
 - Clearly define fee for Design Support Works
 - Owners would never admit this but shall fed back to design quality and design fee matters.
 - Clearly define acceptance procedure
 - Act as CA based on their experience

Merit of Commissioning –continued —to be obtained

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For O&M Engineers:

- Earlier Participation to Cx process team
- Improved Maintainability
- Improved Documentation to operate systems
- High Quality systems hand-over through sufficient quality of TAB, FPT process
- Acceptability to instruction and guidance by CA as Consultant
- Improved O&M activities, assisted by deepened Knowledge and improved working environment
- Encourage them for aggressive actions for energy conservation and global warming gas reduction
 - They need incentive and shall be dignified as who finally realize quality of Design and Cx.



**Thank you
for your participation**