Japanese Energy Star Council 2009 RESNET Building Performance Conference New Orleans

Presented By

Professor Masato Yamazaki, Japanese Sustainable Business Alliance

George D. Sullivan, Eco Smart Building PC

Mark Jansen, Energy Efficient Home Midwest

JESC History

Groundwork for the formation of JESC was started at Green Build Chicago in 2007

- Eco Smart Building was contacted by Professor Masato Yamazaki, who represented the Japanese Sustainable Business Alliance (SBA)
- Professor Yamazaki started to review Green Buildings here in the US and how they performed

JESC History

- Eco Smart Building introduced to the SBA RESNET's concept of modeling, inspecting, and testing a building for tightness and thermal bypass by a third party.
- While visiting several "green" construction projects with Eco Smart Building, Energy Star For Buildings was introduced to the SBA.

JESC History

- Eco Smart Building was invited to present at two meetings of the Sustainable Business Alliance in Japan
  - RESNET testing of Buildings was presented in July of 2008
  - Energy Star for Buildings was Presented in October of 2008

JESC Steering Committee

Formed in July of 2008 in order to formally establish JESC and fulfill its mission in Japan.

- JESC is in the process of setting up as a not-for-profit corporation
- Officers will be elected out of the steering committee

JESC Steering Committee Members

- Mr. Takuya Hasebe, Tostem Corporation
- Mr. Ryozo Murakami, Shinko Electric Co., Ltd.
- Mr. Akira Sagawa, Architect
- Mr. Shogo Nakamura, OM Solar
- Ms. Yuko Nishida, Tokyo Metropolitan Government
- Mr. Koichi Suzuki, K.Ito Architects & Engineers Inc.
- Mr. Masato Yamazaki, Aquinas College
- Ms. Kazuyo Nakamura, Asahi Elles
- Ms. Miki Mizutamari, Asahi Elles
- Special Adviser: Mr. George Sullivan

JESC Supportive Organizations

- Ministry of Education, Culture, Sports, Science, & Technology
- Ministry of the Environment
  - Ms. Nishida of the Ministry of Environment from Tokyo will be a committee member
- Canadian Geothermal Exchange
  - Canadian Geothermal Exchange and JESC have signed an MOU

JESC Pilot Projects

Two Residential Projects

- Executive/Custom Housing (Single Family)
- House Net (Track Housing)

Japan Green School Technology Center

- Example School Project

JESC Pilot Housing Projects

Traditional Multi-generational Single Family Home

Location; Tokyo Prefecture

Climate Zone; Humid Subtropical to Mediterranean

JESC Pilot Executive Housing Building Information

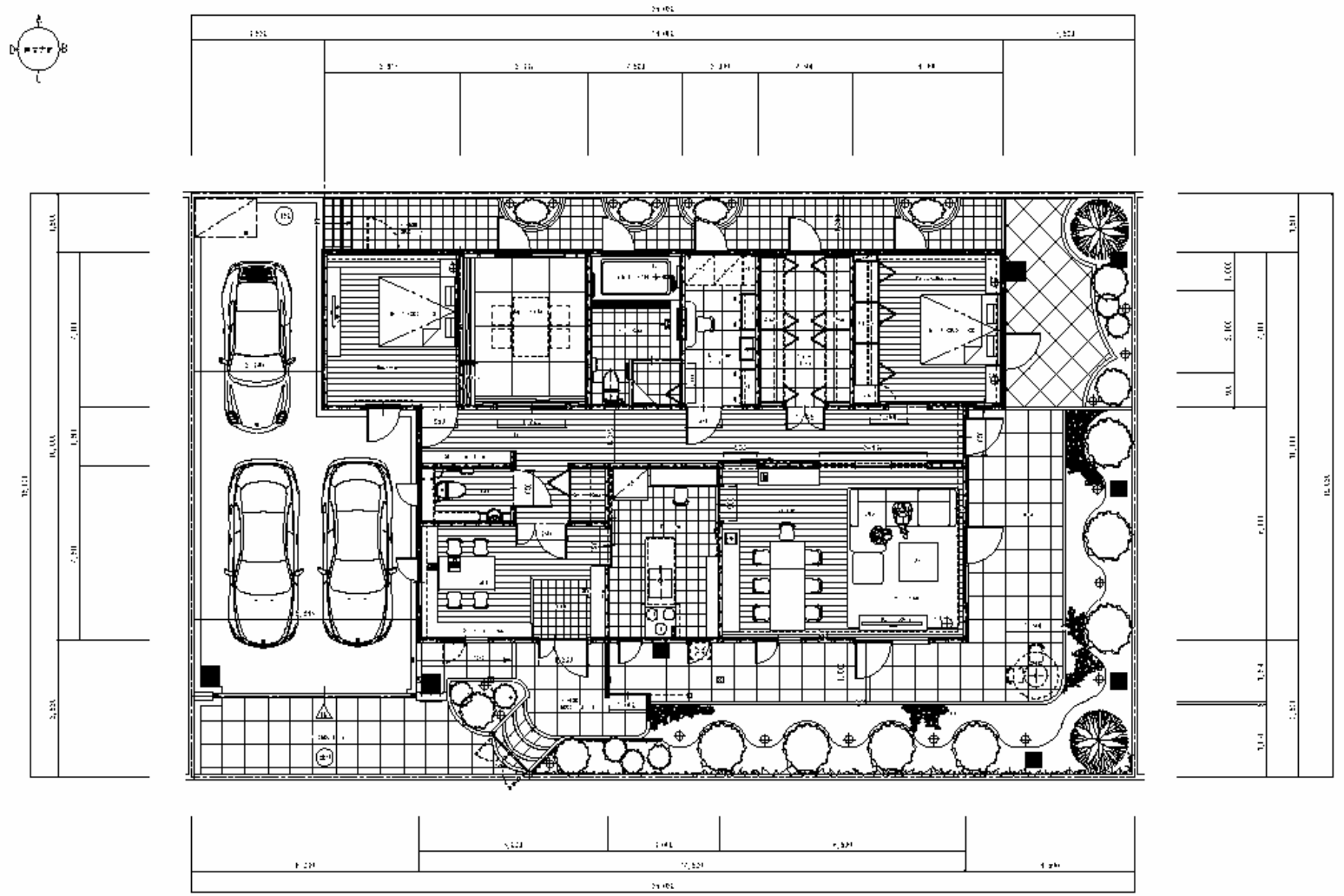
Single Story Floor Plan

- Double Lot 82 feet by 49 feet (25m by 15m)
- Post and Beam Construction
- Earth Quake Cross Bracing
- Crawl Space
- Primary MEP System
  - ERV
  - Air to Air Heat Pump Split system
  - On-demand DHW

JESC Pilot Executive Housing Building Information

Renewable Energy Options

- Pump and dump geothermal
- Ground loop under slab tempering ERV
- Daylight harvesting
- Duel fuel MEP support
- Wind solar hybrid wind turbine
- Vacuum Tube Solar Thermal
  - DWH and Space Conditioning



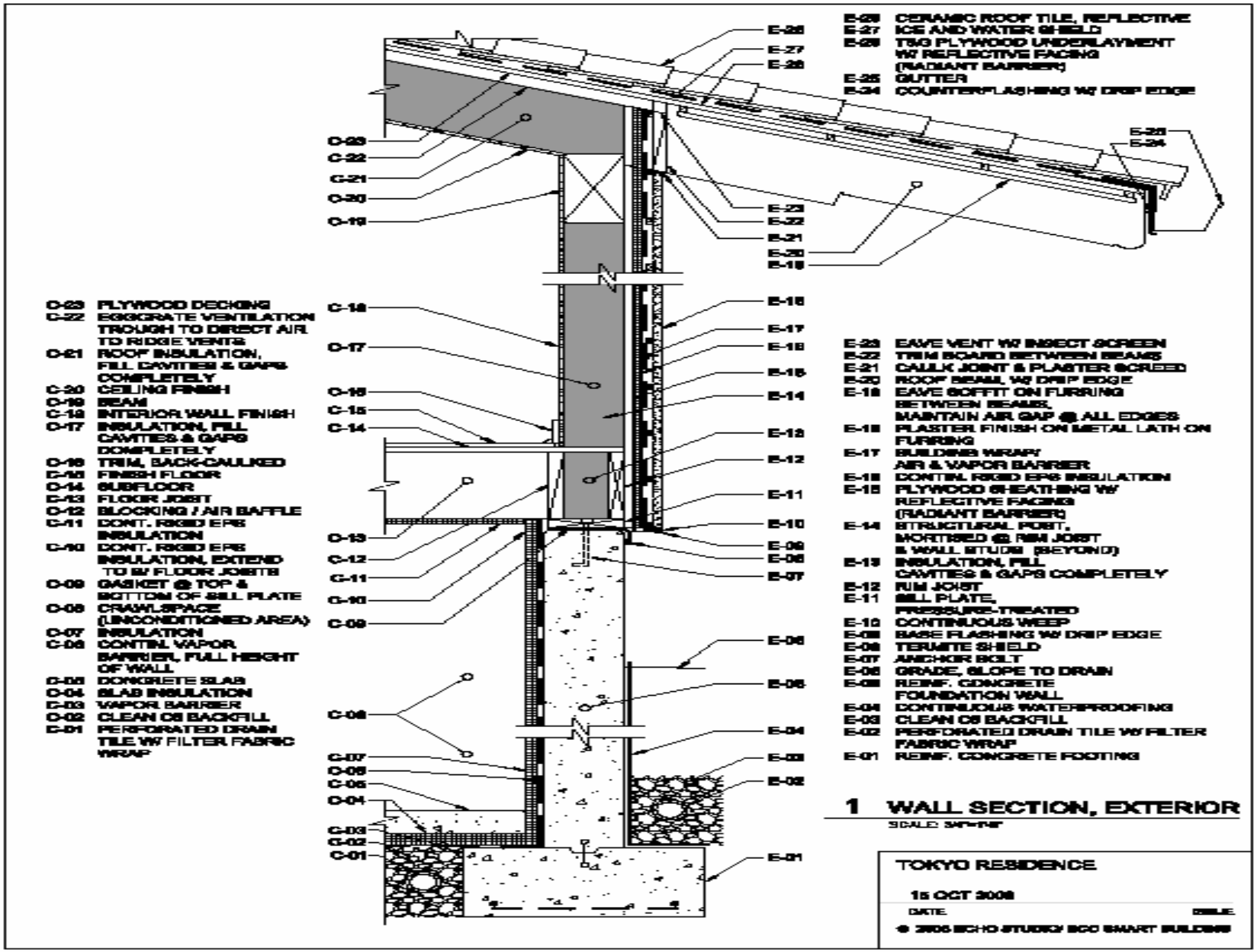
カナセ

Executive Housing Building Information

Wall section was designed for building code review

- Thermal Breaks and R values
- Radiant Barrios not standard
- Current Termite Protection
- Allows for use of min split system for room conditioning

Large over hanging roof Provides sun shading



1 WALL SECTION, EXTERIOR

SCALE: 3/4"=1'-0"

TOKYO RESIDENCE

15 OCT 2008

DATE: SHEET:

JESC Pilot House Net

Standard House in Japan

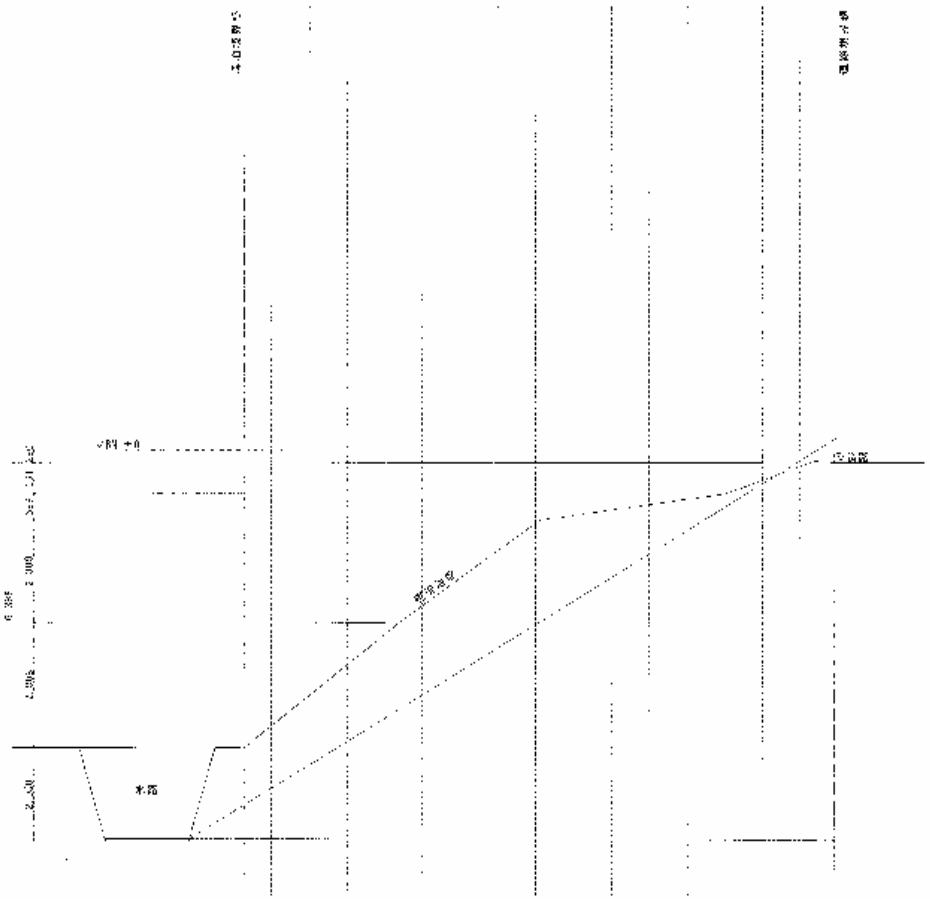
Renewable Energy Use is possible depending on budget

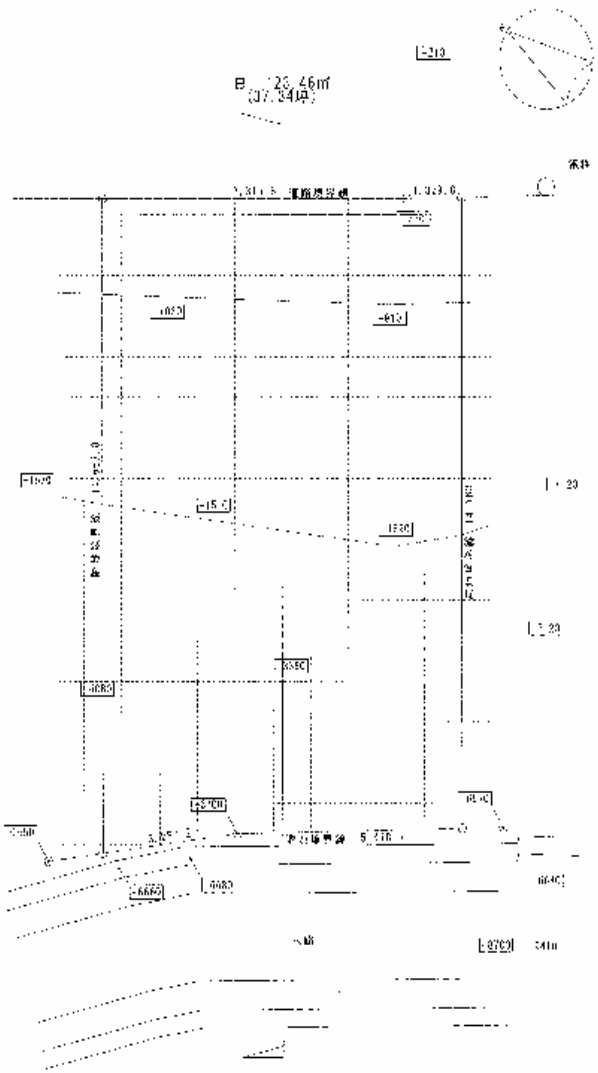
- Pre-Wire and Pre-Pipe for PV, Wind and Solar Thermal

JESC Pilot House Net Building Information

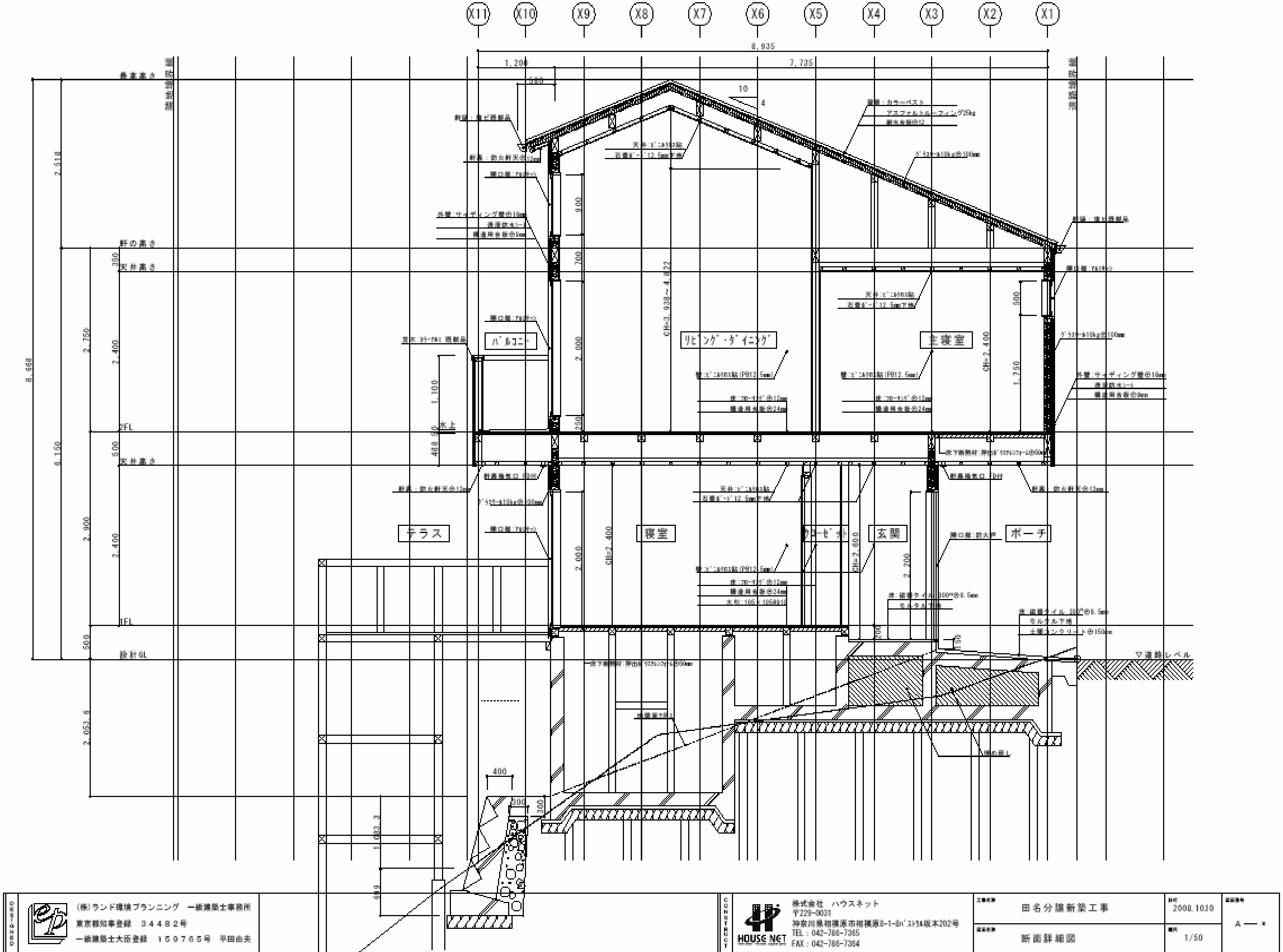
Two Story Floor Plan

- Single Lot 49 feet by 49 feet (15m by 15m)
- Post and Beam Construction
- Earth Quake Cross Bracing
- Crawl Space to some exposed basement (Sloped Lot)
- Primary MEP System
  - ERV
  - Air to Air Heat Pump Split system
  - On-demand DHW





田名分流新築工事計画　2008.9.29　平面図　S=1/100　ランド環境プランニング


X11
X10
X9
X8
X7
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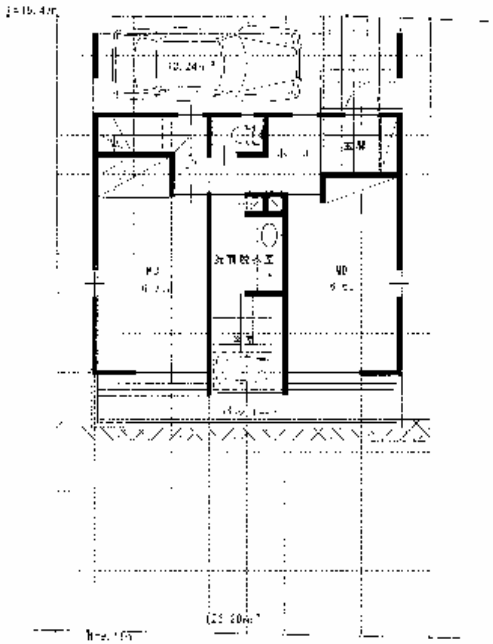
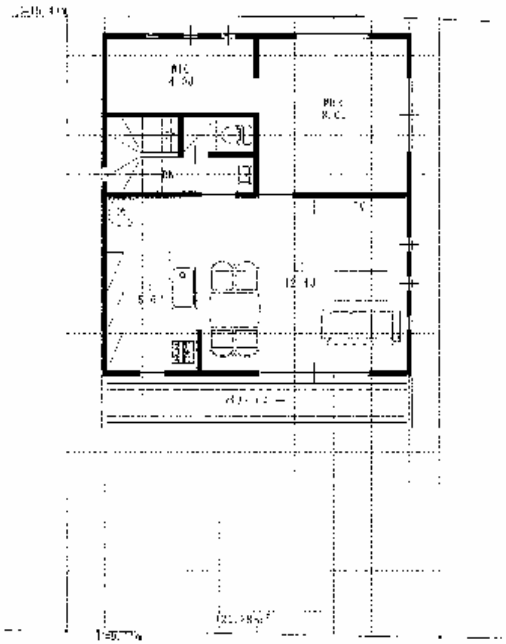
X4
X3
X2
X1
8,935
1,200
7,735
最高高さ
軒の高さ
天井高さ
2FL
天井高さ
1FL
設計GL
リビング・ダイニング
主寝室
バルコニー
テラス
寝室
クローゼット
玄関
ポーチ
▽道路レベル
(株)ランド環境プランニング 一級建築士事務所
東京都知事登録 34482号
一級建築士大臣登録 159765号 平田由夫
株式会社 ハウスネット
〒229-0031
神奈川県相模原市相模原8-1-8ﾊﾟｽﾄﾗﾙ坂本202号
TEL：042-786-7365
FAX：042-786-7364
HOUSE NET
田名分譲新築工事
断面詳細図
2008.10.10
1/50

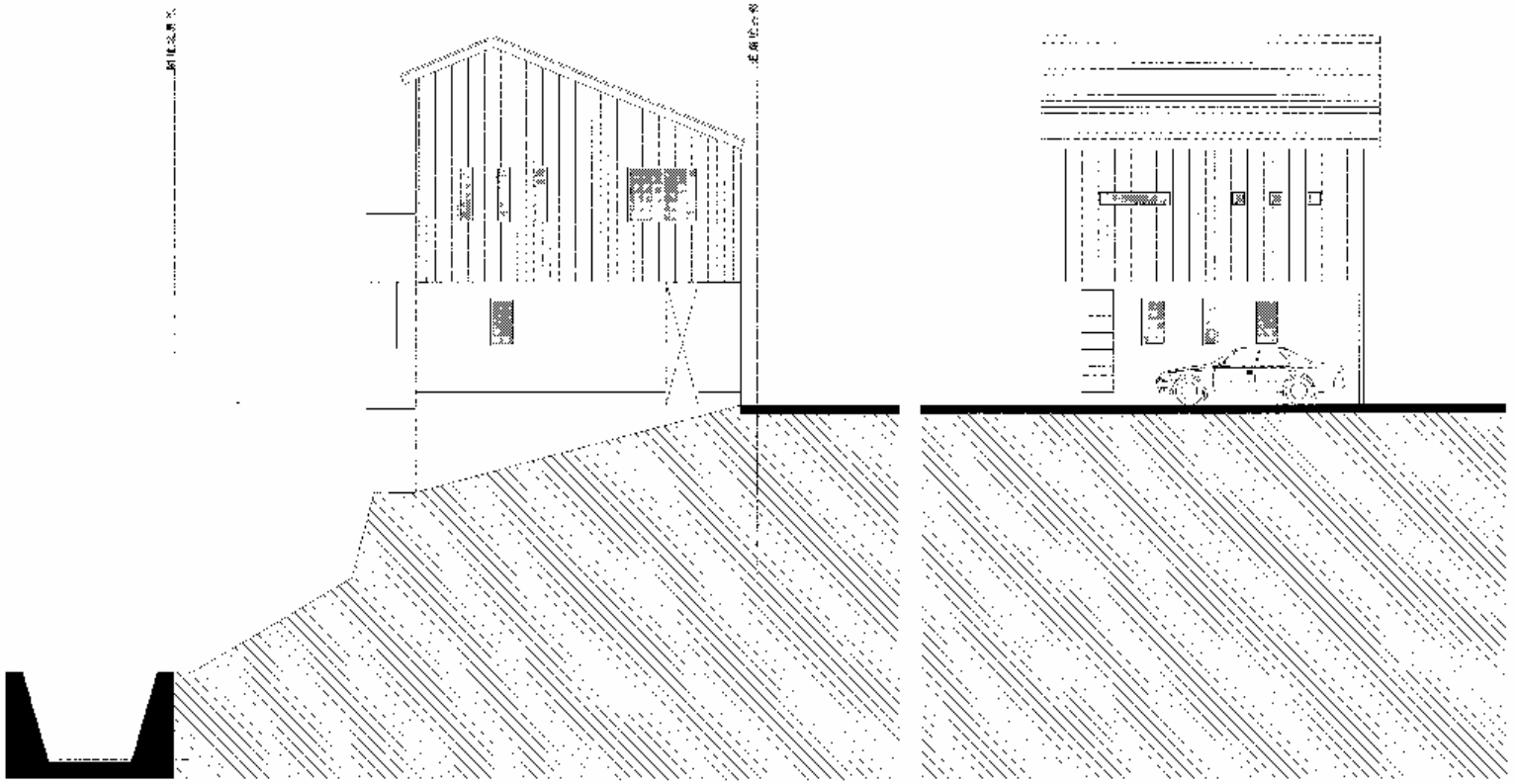
1階床面積	57.14㎡	(17.28坪)
(駐車場面積	18.24㎡	含む)
2階床面積	56.21㎡	(17.00坪)
延床面積	113.45㎡	(34.32坪)
容積率対象床面積	100.21㎡	(30.31坪)
建築面積	58.56㎡	(17.71坪)



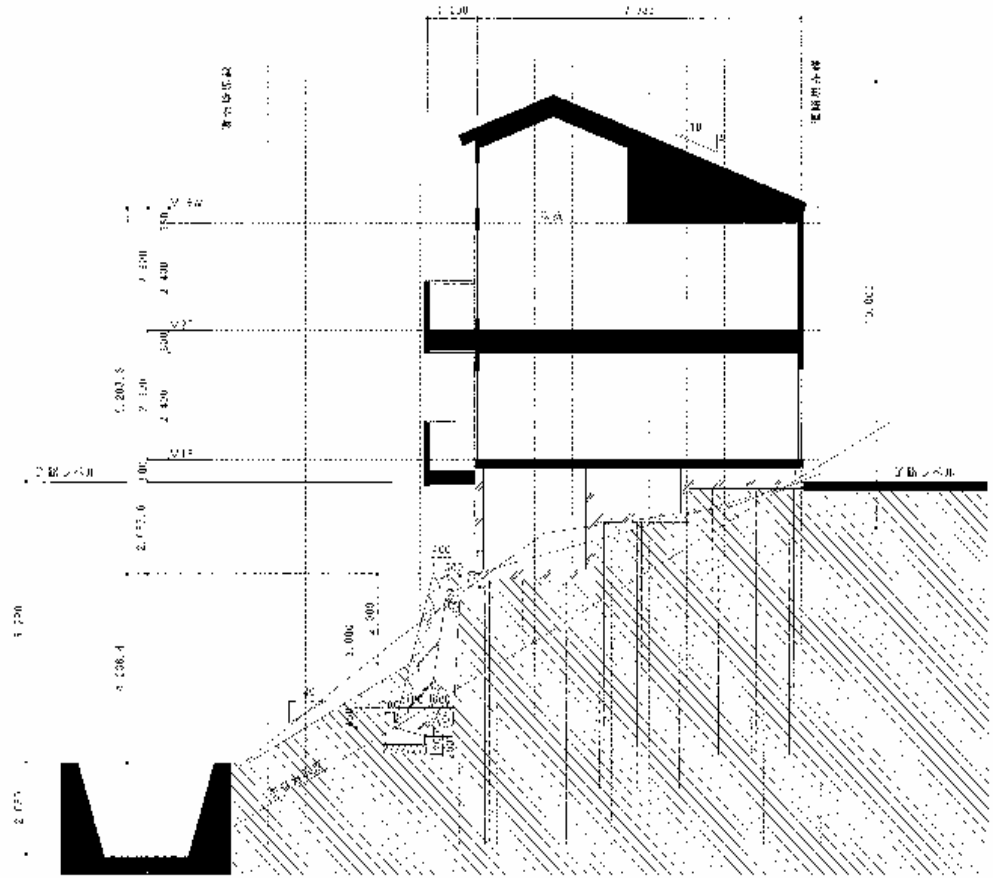
1階平面図



2階平面図



主名分譲新築工事　2008.9.29　立面図　S=1/100　（A案）　（株）ランド環境プランニング



四名分譲新築工事　2008 9.29　断面図　S=1/100　(株) ランド環境プランニング

A案

B案

Introduced Pre-Fabricated Wall System

Elfi Wall System

Recyclable Materials

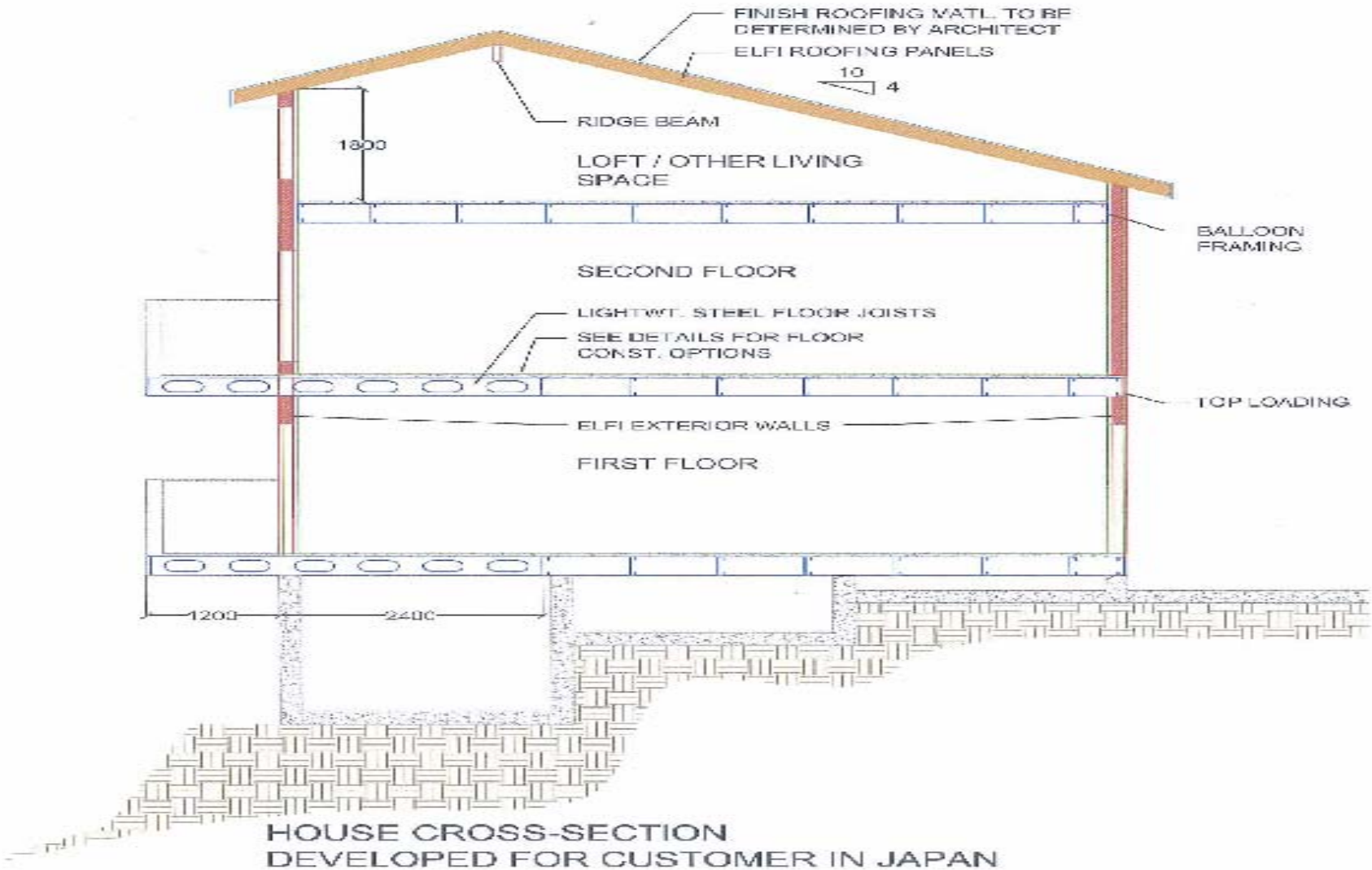
Steel and EPS

Cost efficiency is a key issue

Can be locally manufactured

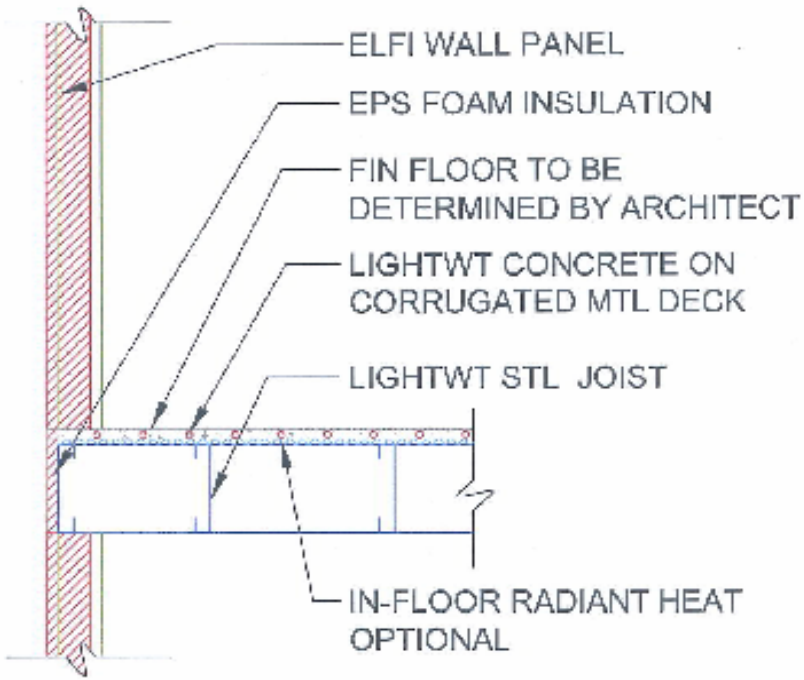
Cradle to Cradle Design of the House

Wall system is in code review

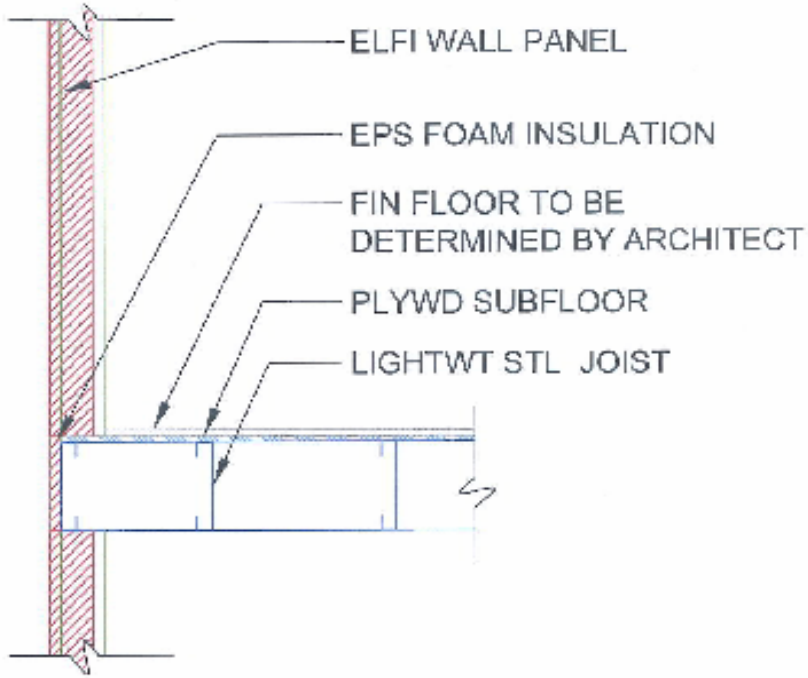


HOUSE CROSS-SECTION
DEVELOPED FOR CUSTOMER IN JAPAN

ELFI BUILDING TECHNOLOGY



FLOORING OPTION "A"



FLOORING OPTION "B"

DETAIL 1

ELFI BUILDING TECHNOLOGY

JESC Pilot Japan Green School Technology Center

Focus on Education of Sustaniabliuty

An RCE is a network of existing formal, non-formal and informal education organisations, mobilised to deliver education for sustainable development (ESD) to local and regional communities. A network of RCEs worldwide will constitute the Global Learning Space for Sustainable Development. RCEs aspire to achieve the goals of the UN Decade of Education for Sustainable Development (DESD, 2005-2014), by translating its global objectives into the context of the local communities in which they operate.

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Core elements of an RCE

An RCE should have four elements

1. Governance - addressing issues of RCE management and leadership
2. Collaboration - addressing the engagement of actors from all levels of formal, non-formal and informal education
3. Research and development - addressing the role of research and its inclusion in RCE activities, as well as contributing to the design of strategies for collaborative activities, including those with other RCEs
4. Transformative education - contributing to the transformation of the current education and training systems to satisfy ambitions of the region regarding sustainable living and livelihood.

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RCE stakeholders

An RCE involves school teachers, professors at higher education institutions, environmental NGOs, scientists, researchers, museums, zoos, botanical gardens, local government officials, representatives of local enterprises, volunteers, media, civic associations or individuals who work in the spheres of sustainable development such as economic growth, social development, and environmental protection, students and learners at all levels.

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Functions of an RCE

- re-orient education towards SD, covering existing programmes/subjects from the point of ESD and designing an integrated SD curricula. ESD programmes are tailored to address issues and local context of the community in which they operate;
- **increase access to quality education** that is most needed in the regional context;
- **deliver trainers' training programmes** and to develop methodologies and learning materials for them;
- **lead advocacy and awareness raising efforts** to raise public awareness about the importance of educators and the essential role of ESD in achieving a sustainable future. RCEs promote the long-term goals of ESD, such as environmental stewardship, social justice, and improvement of the quality of life.

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Major Renovation of an existing structure

Demonstration Project;

Renewable Energy Systems

Site Energy Generation

Building Shell Enhancements

Cradle to Cradle product design

Storm and Potable Water Systems

JESC Pilot Japan Green School Technology Center

Introduction of New Technologies

Geothermal Electric Power Generation
Distribute Generation
Wind, Solar and Ocean Current
RESNET and Energy Star
Energy Passport
District Heating and Cooling
Net Zero Energy Buildings

JESC Trainer Plan

- Two prospective candidates of JESC will be trained in Chicago this spring to be RESNET QA/QC professionals for Japan.

- REM/Rate Software and Required Books for training additional raters in Japan will be funded by the Ministry of Education. The Green School Program will work on software customization and translation.

RESNET / JESC INTERFACE

- JESC AFFILIATE WOULD LIKE TO SUBLICENSE RESNET STANDARD AND MODIFY TO SUIT NEEDS
- JESC IS PLANNING TO PARTICIPATE IN TRAIN THE TRAINER SESSIONS
- JESC IS PLANNING A PROVIDER NETWORK COMPARABLE TO RESNET

Questions ??

Thank You