

# Energy Efficiency Building Design and performance evaluation

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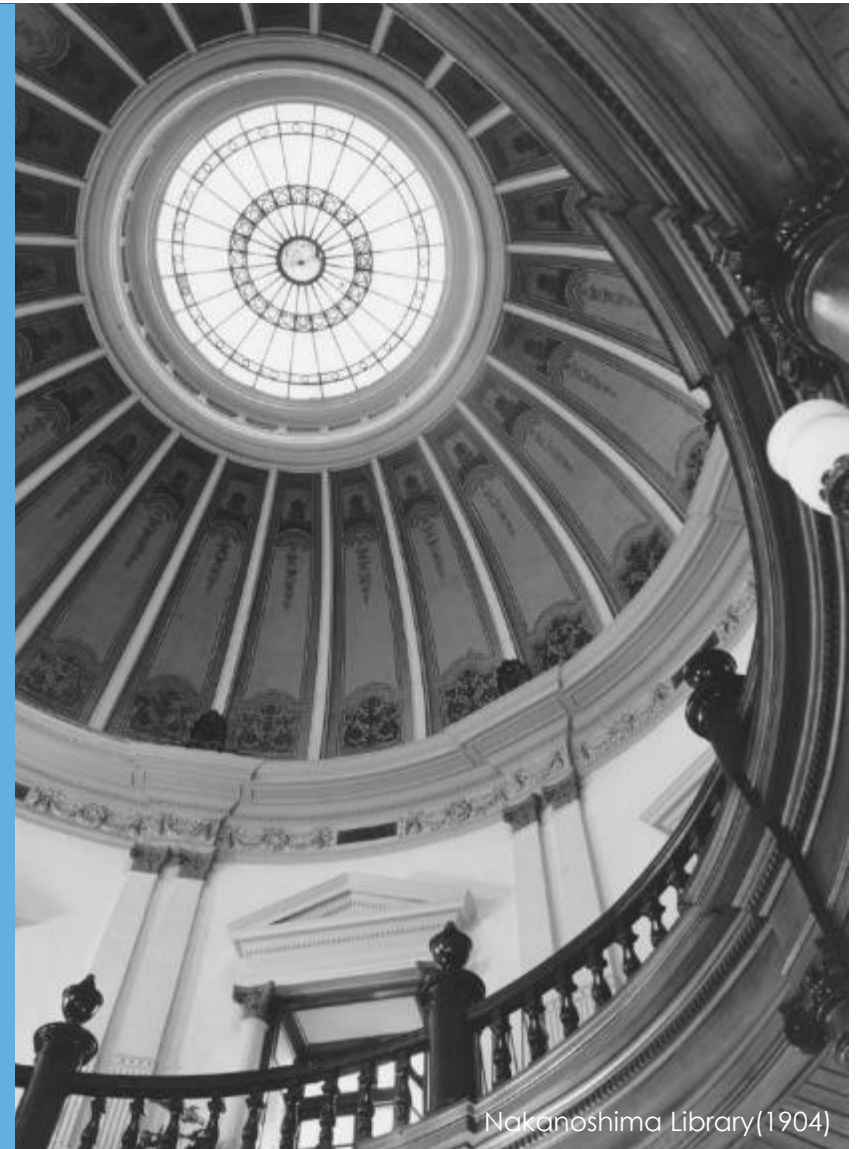
Case of ZEB architecture

-Achievement of ZEB by architectural elements and education

# COMPANY

- Multi-Disciplinary Design Consultancy Firm
- Founded in 1900
- Established in 1950, incorporated in Japan
- Over 25,000 projects in more than 50 countries
- 1,903 Staffs (Group Total: 2,685) as of April, 2018
- Annual Turnover: Over 355 Million US dollar

We contribute to society through work that offers true value. With this as our core objective, we grow as individuals and develop as a worthy company.



Nakanoshima Library(1904)

# ORGANIZATION

## PLANNERS

- Urban Development
- Urban Design & Planning
- Landscape Design
- Urban Infrastructure
- Project Management

## ARCHITECTS

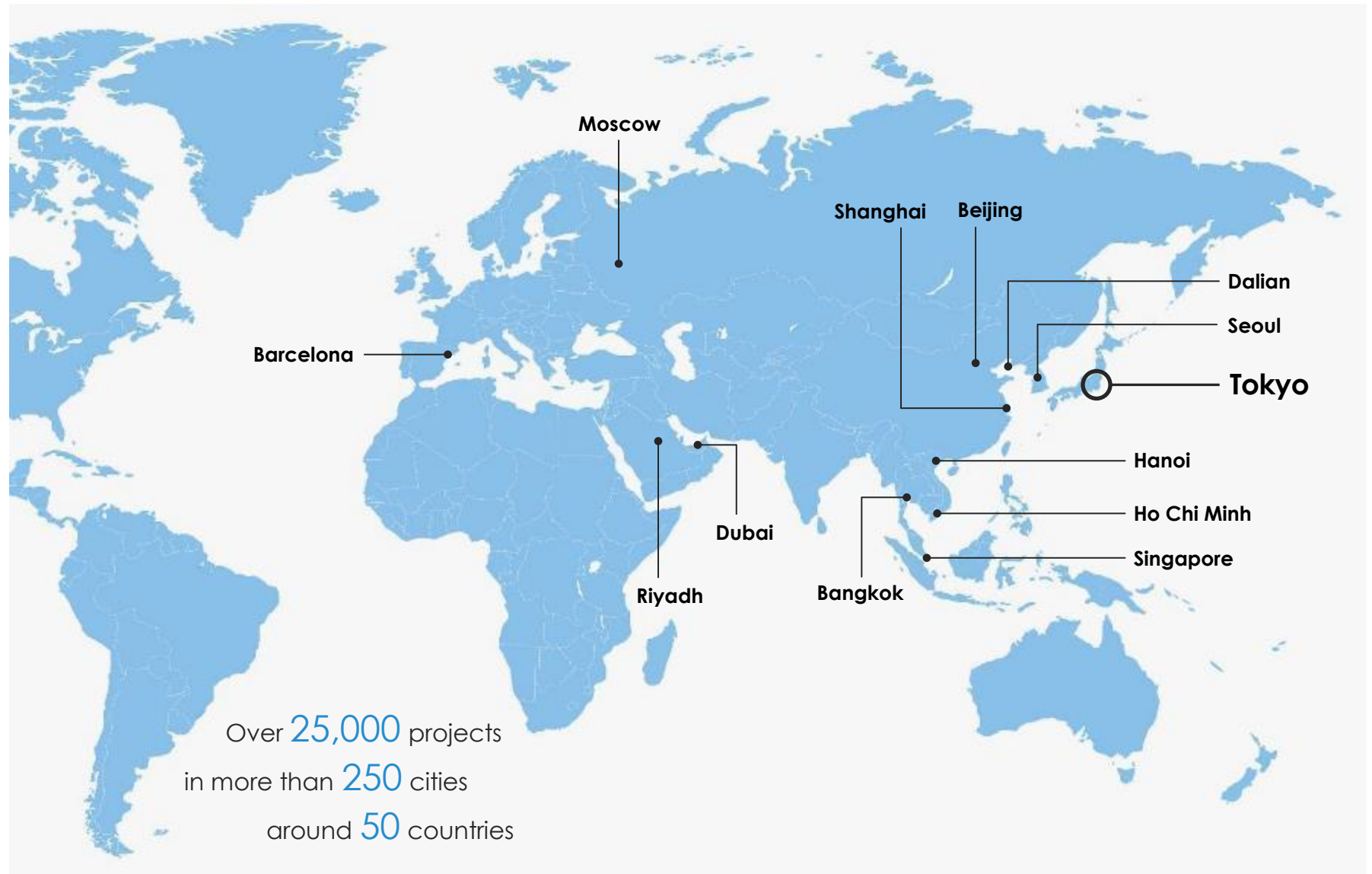
- Office, Government
- Mixed Use, Residential
- Retail, Hotel, Hospitality
- Hospital, Wellness
- Sports, Culture, Education
- Airport, Station
- Life Cycle Design
- Industrial and Research

## ENGINEERS

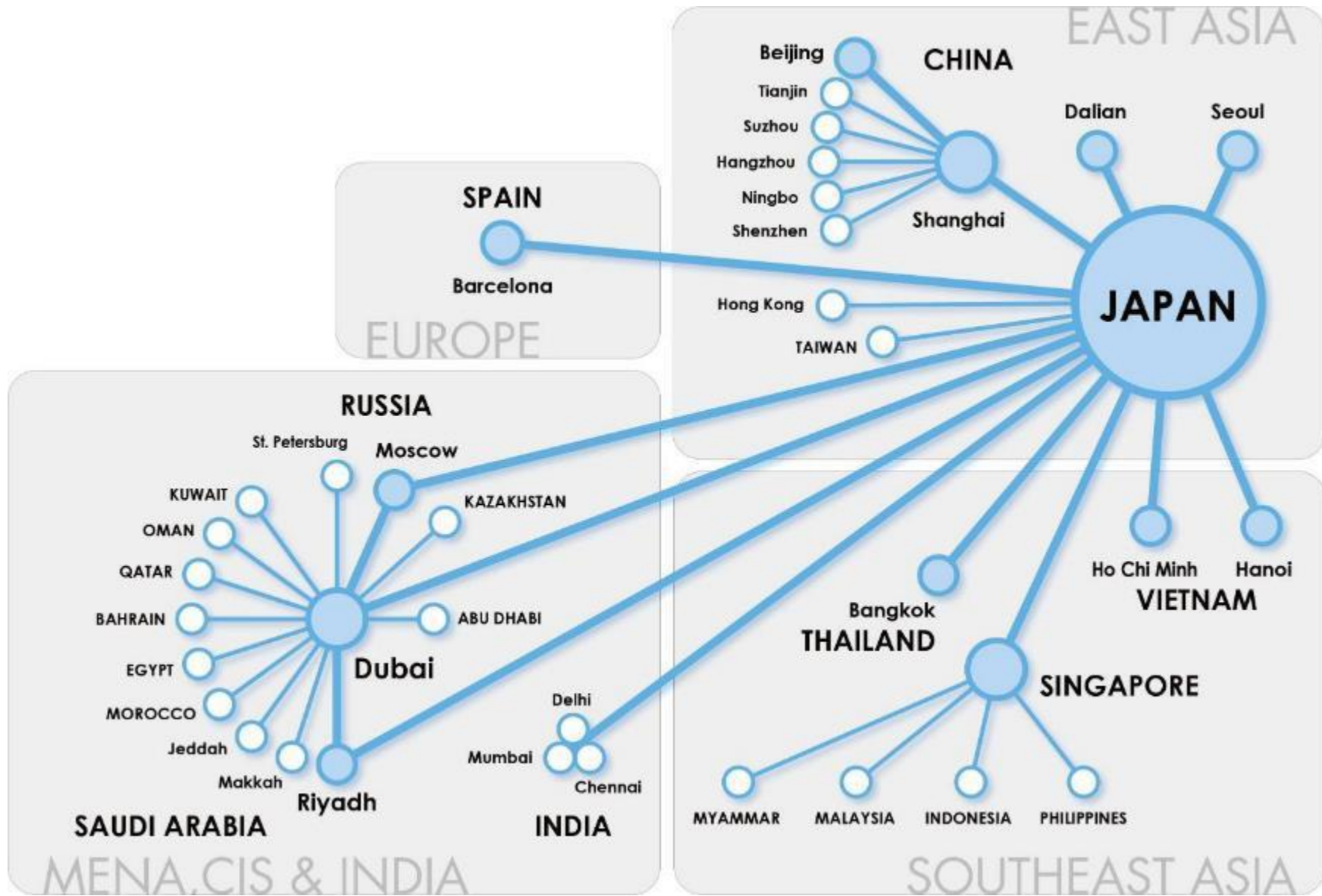
- Structural Engineering
- MEP, Environment
- Disaster Planning

# GLOBAL REACH

12 Oversea Offices

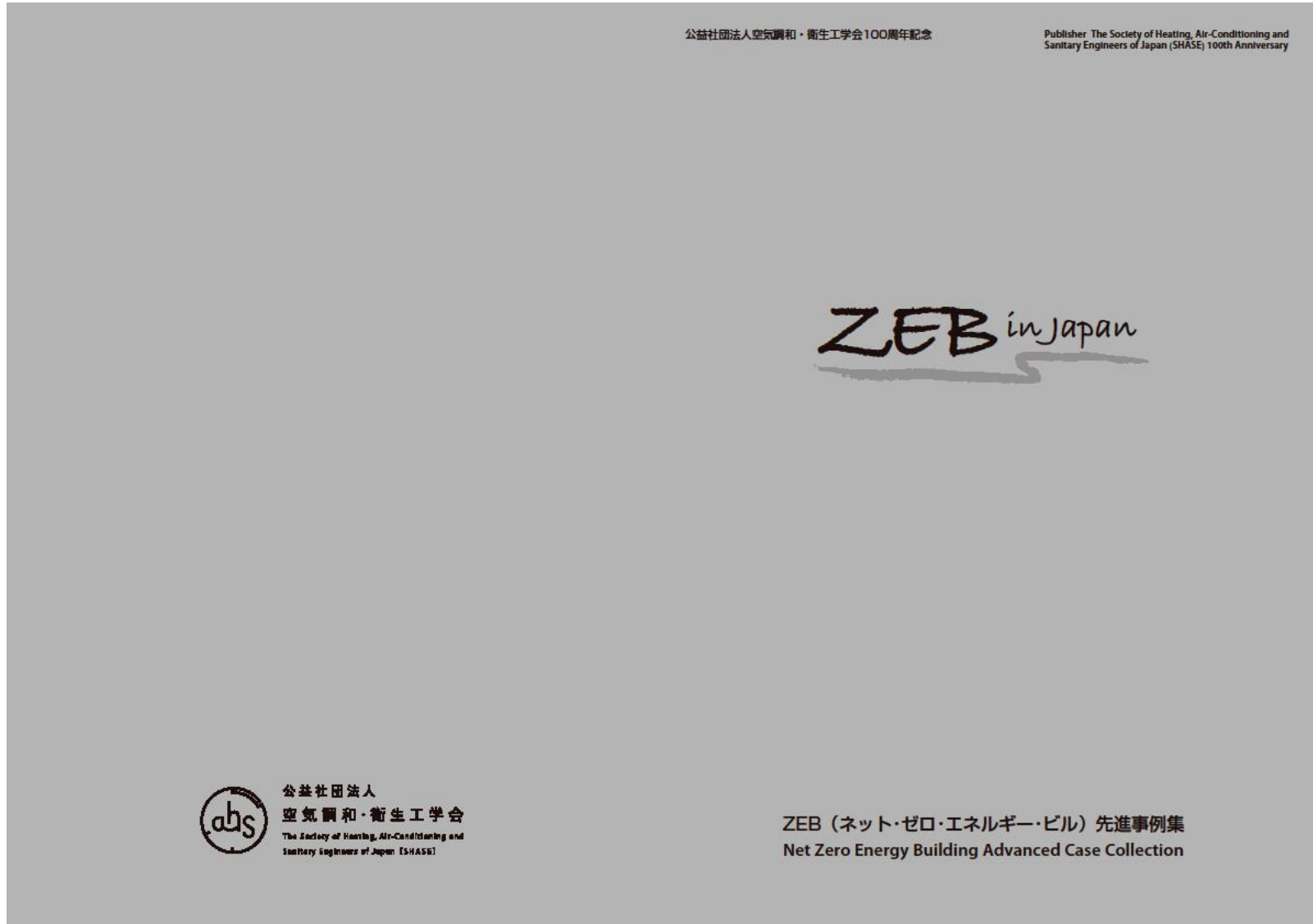


# GLOBAL NETWORK



# 1. ZEB architecture in Japan

# ZEB in Japan

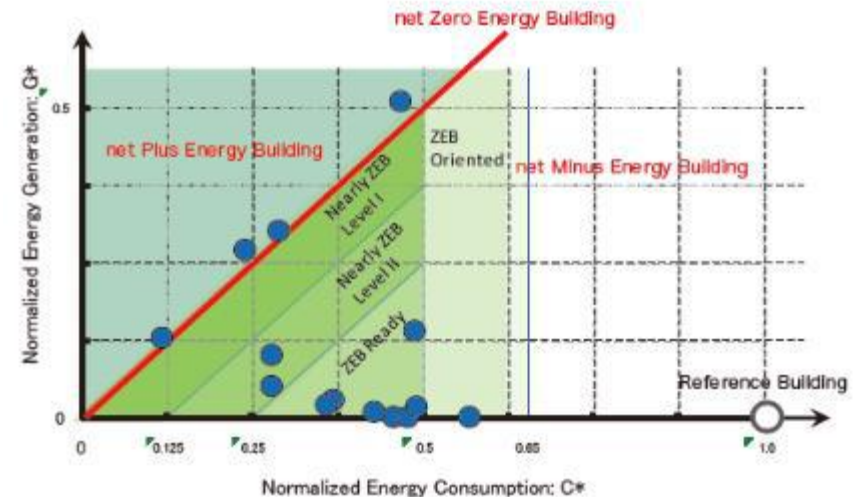


[http://www.shasej.org/recommendation/ZEB%20in%20Japan\\_2017\\_SHASE100th.pdf](http://www.shasej.org/recommendation/ZEB%20in%20Japan_2017_SHASE100th.pdf)



# Technical introduction of 14 ZEB projects

## 国内のZEB先進事例の概要 Overview of Best Practices in Japan



- | No. | Project Name  |
|-----|---|
| 1   | Unnan City Hall   |
| 2   | Shimizu Corporation Headquarters                                      |
| 3   | ZEB Demonstration Building, TAISEI Corporation                        |
| 4   | KT Building   |
| 5   | Takenaka Corporation Higashi Kanto Branch Office                      |
| 6   | OBAYASHI Technical Research Institute Main Building, "Techno-Station" |
| 7   | 21 KOMCEE, The University of Tokyo                                    |
| 8   | DAIKIN Technology & Innovation Center                                 |
| 9   | Minami-Osaka sales office of the Kasai electric power company         |
| 10  | Tokyo Gas Tachikawa Building  |
| 11  | Sanken Setsubi Kogyo Tsukubamirai Technology Center                   |
| 12  | DAI-DAN Kyushu Branch Office "Enefice Kyushu"                         |
| 13  | The SNK Engineering Center -"Demonstration Labo"                      |
| 14  | SHINRYO Headquarters Building   |



# 14 ZEB projects



## 2. Case of ZEB architecture 1

-Achievement of ZEB by state-of-the-art technology

# Daikin Industries, Ltd. Technology and Innovation Center



# Daikin Yodogawa factory



**Tokaido  
Shinkansen**

**Site Area(Yodogawa Factory) :  
396,666.66m<sup>2</sup>**

**TIC site plan : 29,903.35m<sup>2</sup>**

**Kanzaki River**

**Yodo River**

# Site plan



TIC

TIC Forest  
(約3,800m<sup>2</sup>)

Main entrance



# Daikin TIC (Technology and Innovation Center)

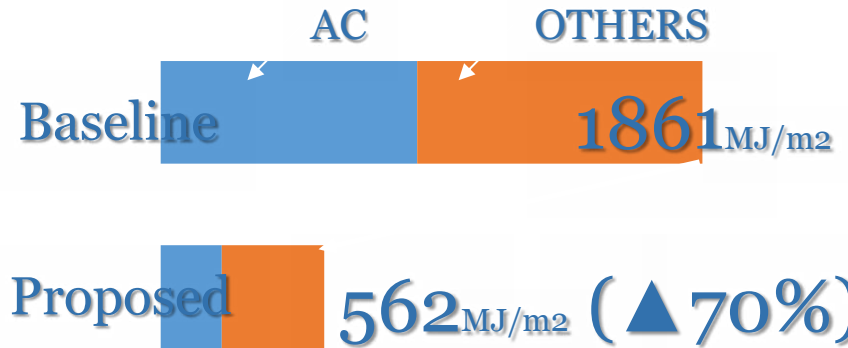
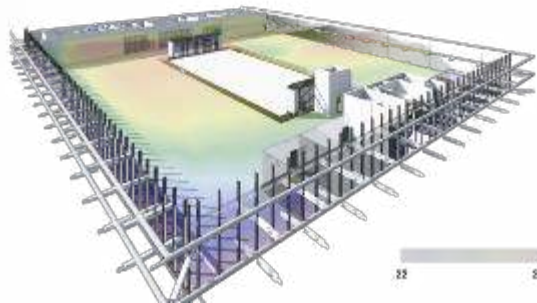


New Technology

Innovative Cx

Top level Energy and Environment

Passive and Active Method



Carbon Management

ZEB  
LEED Platinum



# TIC Forest

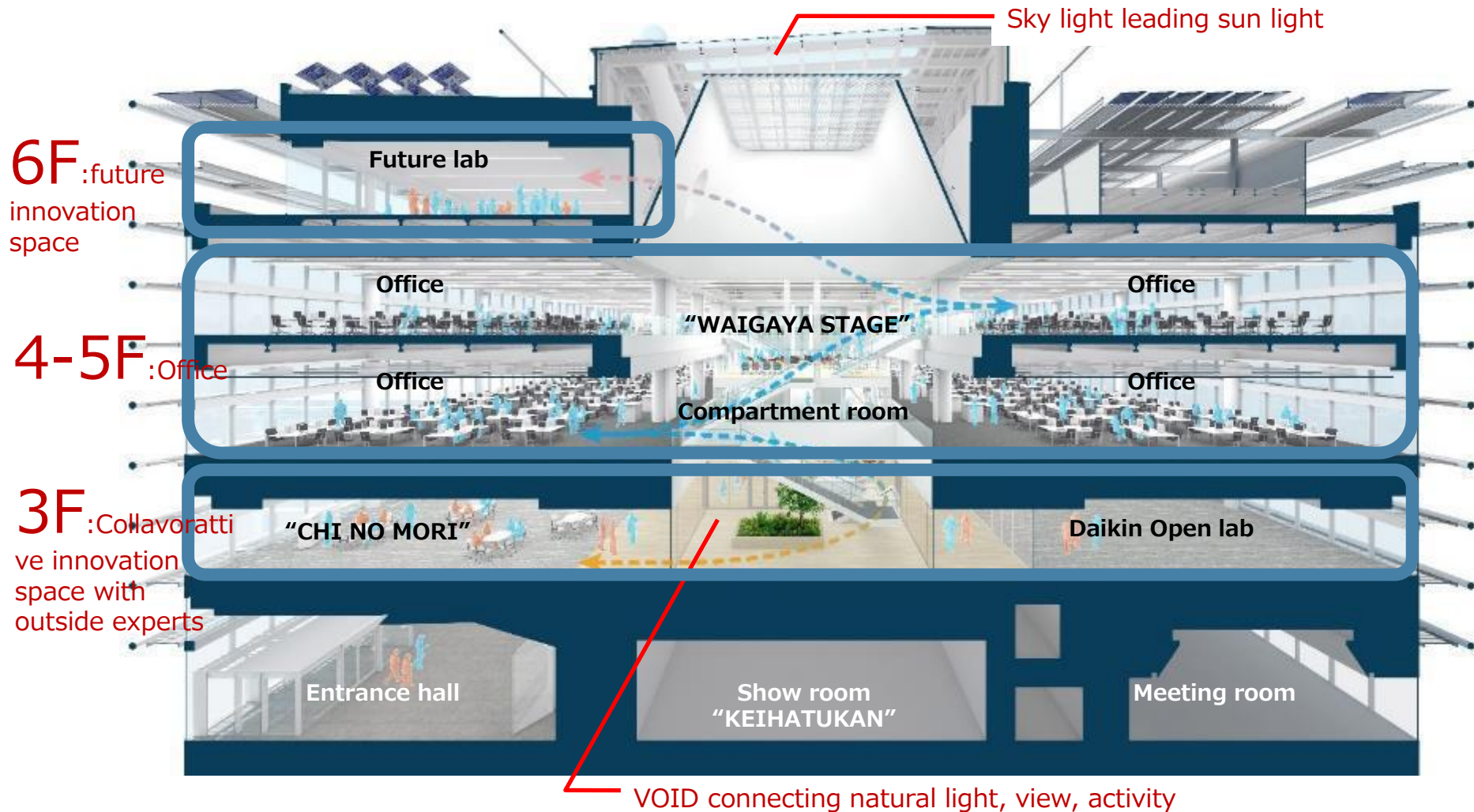






# South-north cross section of Office zone

← 60m×60m×2layers → Mega floor office (≒6,000m<sup>2</sup>)



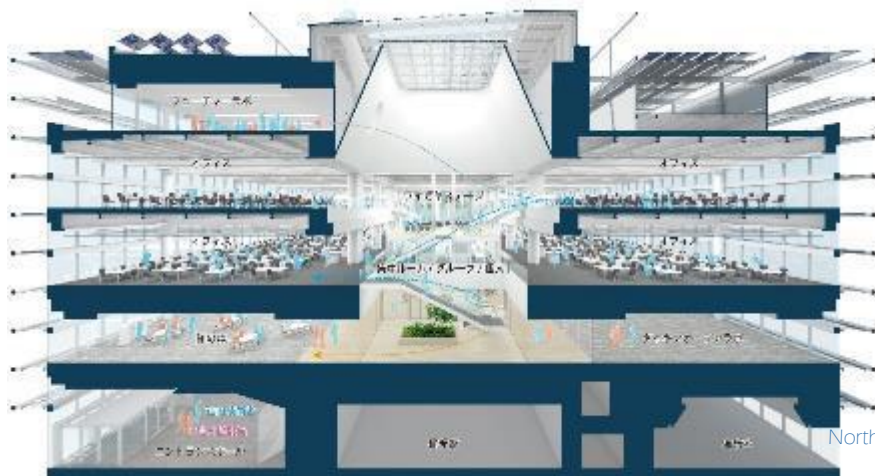


Work place floors (3000 sqm x 2 stories) and Wai-Gaya Stage at a center position.

Each office zone is located within a 30-m radius from Wai-Gaya Stage, which function as a place for cross-functional, collaborative creation activities



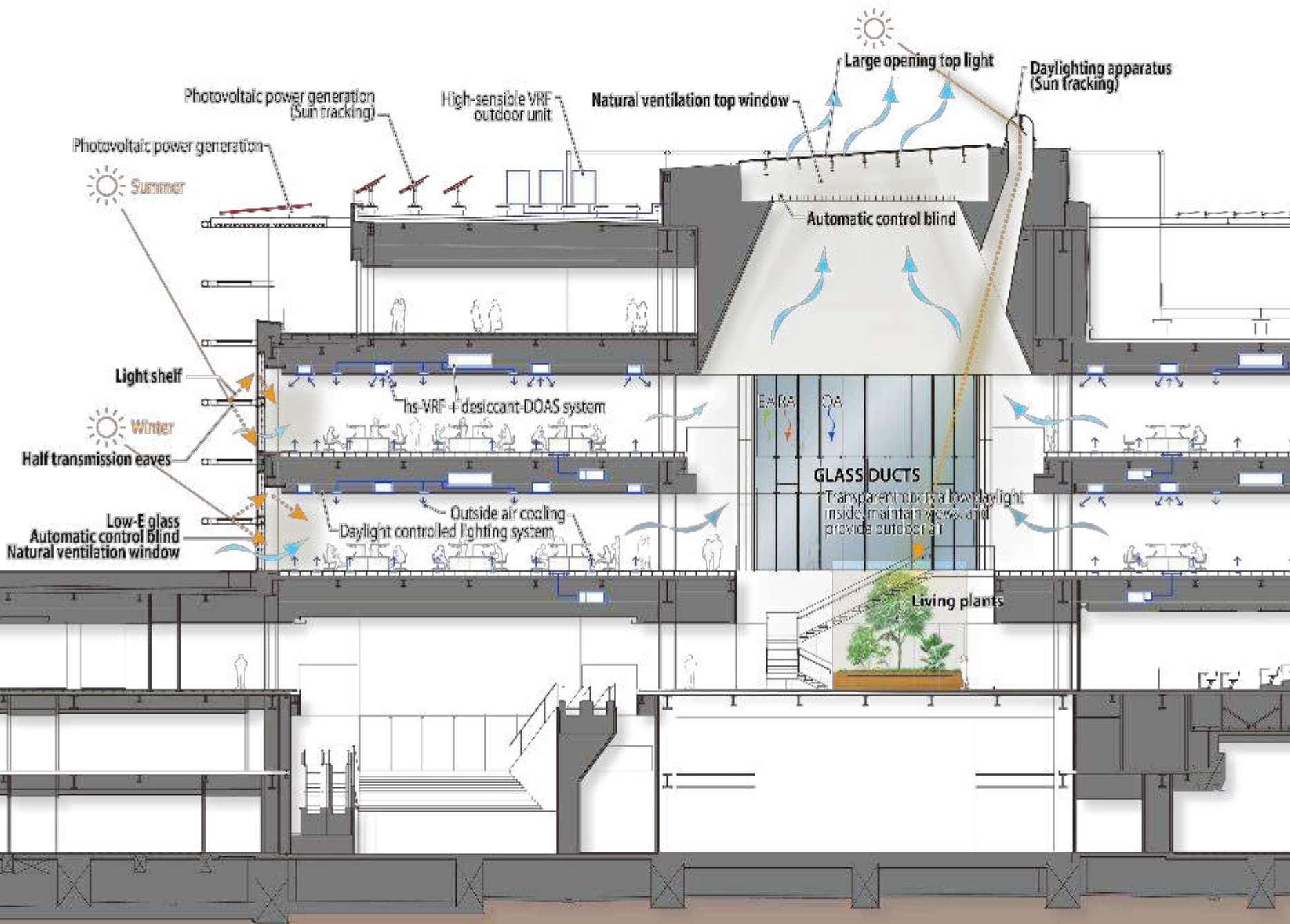
Knowledge Flow Structure in which people, knowledge and information circulates 2-storey office with Wai-Gaya Stage in the center accommodates 700 researchers through east and west atriums.



North-South Section of Office Area



5th Floor Plan 20



# HVAC system - Passive and active method

