Agri Chapel
Yu Momoeda Architecture Office
Site Surrounded by an Agricultural Park

Oura Tenshudo
the Oldest Wooden Gothic Chapel in Nagasaki

Koyagumi
Japanese Traditional Wooden Structure
Crystal Structure of Forest

Form and Logic of the Structure

The Three Scales

Plan Diagram

Section Diagram

Volume and Void System

45° Rotation = $\sqrt{2}$
Structure Layered by Tree-like Unit System

3rd layer:
16 pillars unit
60mm square

2nd layer:
8(4+1/2 × 8)
pillars unit
90mm square

1st layer:
4 pillars unit
120mm square

‘Tree-like Unit System’

Buckling Resistance Design

‘Branch-Tree Detail between Tree Structure Layers’

Structural Design Considering Constructability

‘Buckling Mode’

‘Safety Ratio’

Total Safety of the Structure
Roof: ‘Plane Stiffness’

Wooden Unit: ‘Vertical Load Support’
- 3rd layer tree-like unit (Cedar 60 cm x 60 cm)
- 2nd layer tree-like unit (Cedar 50 cm x 60 cm)
- 1st layer tree-like unit (Cedar 120 cm x 120 cm)
- Horizontal Beams (Steel Rod Φ15, Φ12)

Wall: ‘Bearing Wall’
- Bearing Wall (Resist to Wind Loads and Seismic Forces)

Void: ‘Pendentive Dome’

Surroundings
- Naive
- Aisle
- Park (Northeast)
- Sea (Southwest)
- Mountains (Northwest)