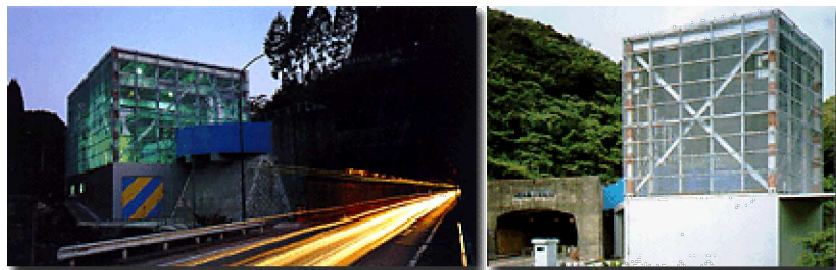


# Kakuto Tunnel Ventilation Facility



## Architectural Outline

The system for air flow is the main distinguishing feature of this ventilation facility. The mechanical equipment necessary for ventilating a tunnel, listed in sequence starting from the tunnel side, are duct, motor, fan and filter. Ordinarily, these are connected in a straight line and accommodated in a thick concrete box. In the case of this building, the filter was eliminated, or rather replaced by the expanded metal of the exterior wall. This not only makes the dynamic structure of the ventilation system visible from outside but greatly reduces the volume of air flow per unit area of filter; that makes maintenance work such as cleaning and replacing filters unnecessary because the filter here is tens of times larger in area than a normal filter. In addition, the construction cost was quite low because the concrete exterior wall normally used was replaced by expanded metal.



## Architectural Data

Name	Kakuto Tunnel Ventilation Facility
Location	Ohata-machi, Hitoyoshi City; Higashi-Kawakita, Ebino City, Miyazaki Prefecture
Main function	machine room
Developer	Kumamoto Prefecture
Architects	Akira Koyama and Pacific Consultants
General contractors	Marusho Construction
Total floor area	Hitoyoshi side 365 square meters; Ebino side 353 square meters
Extent	two aboveground floors
Structure	reinforced concrete construction and steel-frame construction
Construction period	December 1988 - October 1989
Total construction cost	704 million

## Profile of architect



### Akira Koyama

- 1951 Born in Osaka
- 1977 Completed master's course, Department of  
Architecture, College of Science and  
Technology, Nihon University
- 1978~  
80 Studied at Dortmund University and  
Technical University of Berlin; D. Eng.  
Nihon University
- 1984 Established DER PLAN
- 1988 Organizer, IBA Exhibition
- 1997 Professor, Kobe Design University

### ●Principal Works

Okamoto House (1996)

●Writings

Mikan no teikoku - Nachisu Doitsu no kenchiku to toshi (The unfinished empire - the architecture and city of Nazi Germany) (co-author); Toshi kyoju sengen (Urban dwelling manifesto) (editor)

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Photo : Mitsuyasu Yagi