SICULORUM GYMNASIUM

STUDIUM ARCHITECTURAE AC SCIENTIAE AEDIFICANDI

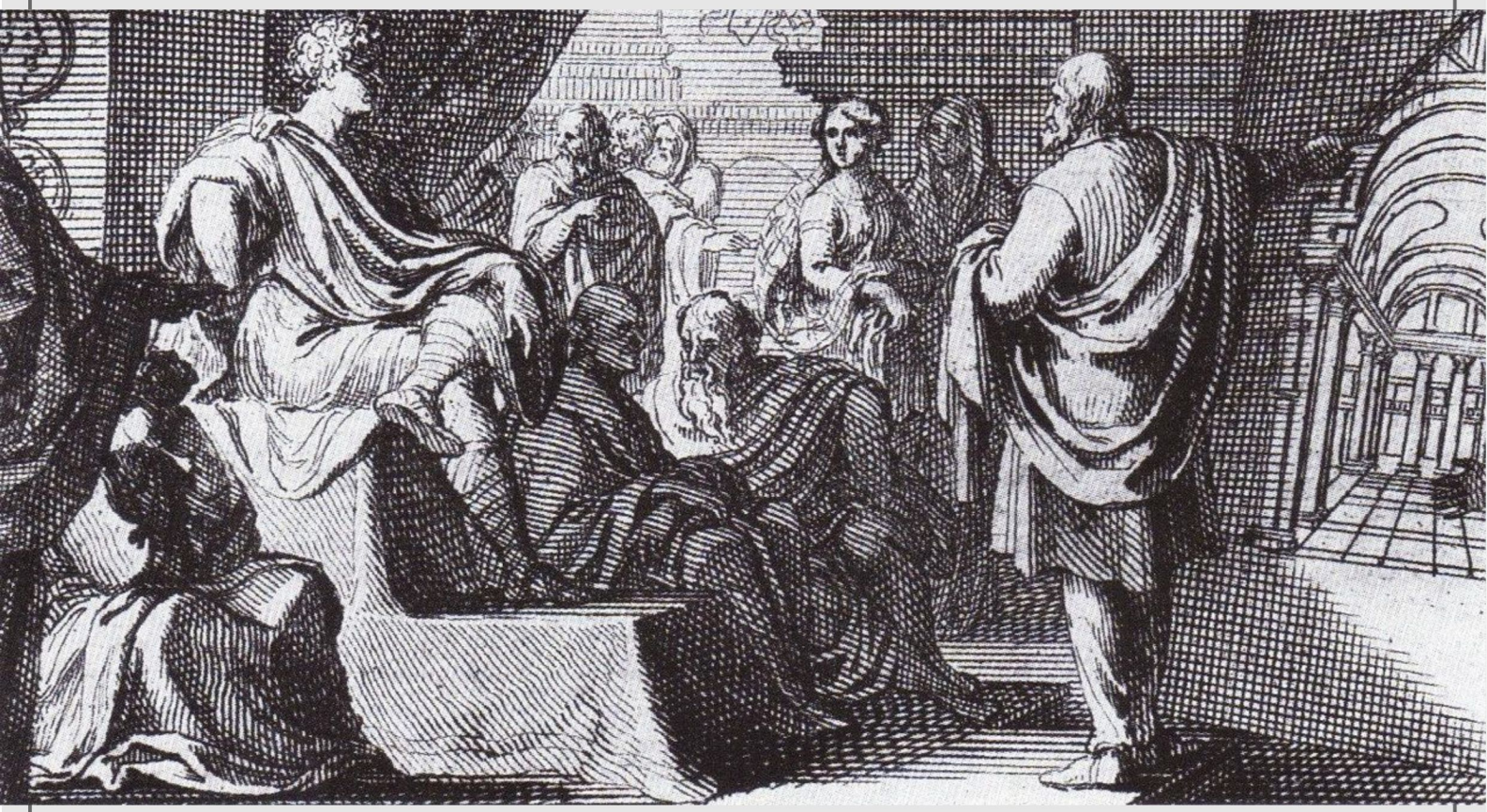
Dissertatio

# De firmitate, utilitate venustateque Athenaei Aedificiorum in regionibus terrae motui subiectis

habitura ab

- AKIRA WADA -
*Emerito Magistro Artis Aedificandae Praeceptorum*
*in Universitate Tokyo*

Catinae, a.d. XI Kal. Oct. MMXVIII A.D.



*More than 2000 years ago, in his famous treatise "De Architectura" published in English as "Ten Books on Architecture", Marcus Vitruvius Pollio identified three qualities for well-designed architecture: strength, functionality and beauty. For buildings and university campuses, the most important function is 'strength' as to provide a durable and comfortable space to accommodate people, even in the face of natural hazards such as earthquakes. As a branch of art, architecture also needs to be aesthetically beautiful. In earthquake-prone regions such as Japan, however, the emphasis on seismic safety of buildings frequently leads to the sacrifice of 'functionality', intended as comfort and value that people will pay for, and 'beauty', referring to aesthetic pleasure for people.*

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# De firmitate, utilitate venustateque Athenaei Aedificiorum in regionibus terrae motui subiectis

21 Settembre 2018 9:00

Aula magna Ingegneria (Edificio per la didattica) Edificio 14

Ore 9:00 Saluti istituzionali:
Salvo Pogliese - sindaco Città di Catania
Prof. Francesco Basile - rettore Università degli Studi di Catania
Prof. Enrico Foti - direttore DICAR Università di Catania
Ing. Giuseppe Piana - presidente ANCE | Catania
Ing. Giuseppe Platania - presidente Ordine Ingegneri
Arch. Alessandro Amaro - presidente Ordine Architetti
Dott. Antonio Pogliese - presidente del Centro Studi sui Rischi
Ing. Mauro Antonino Scaccianoce - presidente Fondazione dell'Ordine degli Ingegneri
Arch. Veronica Leone - presidente Fondazione degli Architetti
Geom. Paolo Nicolosi - presidente Collegio dei Geometri della provincia di Catania

Ore 9:30 Introduzione, coordina Prof. Ivo Caliò
Prof. Santi Cascone - La prevenzione sismica ed il sismabonus.

Ore10:00 Seminario, coordinano Prof. Ivo Caliò, Prof. Giuseppe Oliveto
Prof. Akira Wada - Strength, functionality and beauty of university buildings in earthquake-prone countries

**Strength, functionality and beauty of university buildings in earthquake-prone countries**

*Akira WADA Professor Emeritus, Tokyo Institute of Technology*

Abstract: Strength, functionality and beauty are the three qualities identifying well-designed architecture. For buildings in earthquake-prone countries such as Japan, emphasis on seismic safety frequently leads to the sacrifice of functionality and beauty. Therefore, it is important to develop new structural technologies that can ensure the seismic performance of a building without hampering the pursuit of functionality and beauty. The moment-resisting frame structures widely used for buildings in Japan are likely to experience weak-story collapse. Pin-supported walls, which can effectively enhance the structural story-by-story integrity of a building, were introduced to prevent such an unfavorable failure pattern in the seismic retrofit of an eleven-story building on a university campus in Tokyo, while also greatly aesthetically enhancing the façade of the building. The slight damage observed and monitoring records of the retrofitted building during the 2011 Tohoku earthquake in Japan demonstrate that the pin-supported walls worked as intended, protecting the building and guaranteeing the safety of its occupants during the earthquake.

**Akira Wada,**
**Dr. of Engineering**

**PROFESSOR EMERITUS**
**EXPERT EARTHQUAKE ENGINEERING SPECIALIST**
**TOKYO INSTITUTE OF TECHNOLOGY**

Dr. Akira Wada, recipient of the 2011 Fazlur R. Khan Lifetime Achievement Medal and Professor Emeritus of the Tokyo Institute of Technology, is considered to be a Japan's leading expert in structural engineering with a specific focus on seismic structural design, seismic isolation and damping structures. Dr. Wada's contributions to the field of science and technology and connections in Japanese academic and government circles make him uniquely qualified to lead and consult on a wide variety of projects.