

Innovation and Standardization: Challenges and Perspectives in the Construction Sector

Guglielmo Carra, Arup

Standardization Workshop, Brussels, 06.11.2015

What is Arup?

I&S in our projects

I&S in our products

I&S in our future

What is Arup?

I&S in our projects

I&S in our products

I&S in our future



38
Countries

90
Offices

12.000
Employees





Arts and culture

Arup has a strong tradition in designing arts buildings, and the skills to reinvent them for the future.



Aviation

Aviation clients come to Arup for holistic solutions that balance complex challenges.



Commercial property

We evolve with the changing aspirations and challenges of developers, owners and occupants.



Maritime

We bring fresh thinking to port development and waterfront projects to promote balanced shoreline solutions.



Mining

To the complex demands of mining operations, we bring holistic, locally appropriate solutions.



Rail

Considered rail solutions can ease transport challenges for today and the future.



Education

By understanding purpose, performance and future use, we bring enduring value to educational environments.



Energy

Arup brings depth of experience to energy challenges worldwide.



Government

We help the public sector to build communities that will thrive into the future.



Residential

We create desirable places to live, while seeking smarter solutions for all.



Resources and waste

Arup offers a wide range of services for all aspects of resource and waste management.



Retail

We understand the art and science of creating a better retail experience.



Healthcare

We create caring environments that are models for today, and ready for tomorrow.



Highways

Wherever new or better roads help communities prosper, we can make original solutions possible.



Hotels and leisure

We bring focus to people, place and performance in hotel developments worldwide.



Science and industry

We help industry, science and technology providers to evolve with confidence.



Sport

To inspire sport's best, Arup helps to create high-performance venues.



Water

Arup takes an integrated approach to deliver solutions for complex water management problems.

What is Arup?

I&S in our projects

I&S in our products

I&S in our future

YOUR DEFINITION
OF INNOVATION:

...

?

BETTER
MORE
FREE
TIME

STAND IN FUTURE
& LOOK BACK

NEW TOOLS
TO OLD
PROBLEMS

BIG DIFFERENTIATION

CHANGE
BEHAVIOUR

CULTURE

PLATFORMS

PEOPLE

METHODS

• HARD WORK

MYTHS

• ACCIDENTAL OBSERVANCE

• RIGHT PLACE RIGHT TIME

FLATNESS OF ARUP

NOT MUCH
SERENDIPITY

EXCEPT
WHERE
THERE IS
CROSS OVER
OF DISCIPLINE

INCLUDE
OUTSIDE
COMPANIES

EXPERIENCE

TIME WITH THE 'TROOPS'

STIMULATING

MULTI
SENSORY

HOW TO
CAPTURE
IDEAS

INNOVATION
AT ARUP

CURIOSITY + NECESSITY

BRAINSTORMING

HAPPENS OFTEN

IN OUR CULTURE
TO BRING PEOPLE
AROUND A TABLE

ENVIRONMENT

ENABLER OF
CREATIVITY

SPACE TO
TALK

CAN
HAPPEN
WITHOUT
MEETING

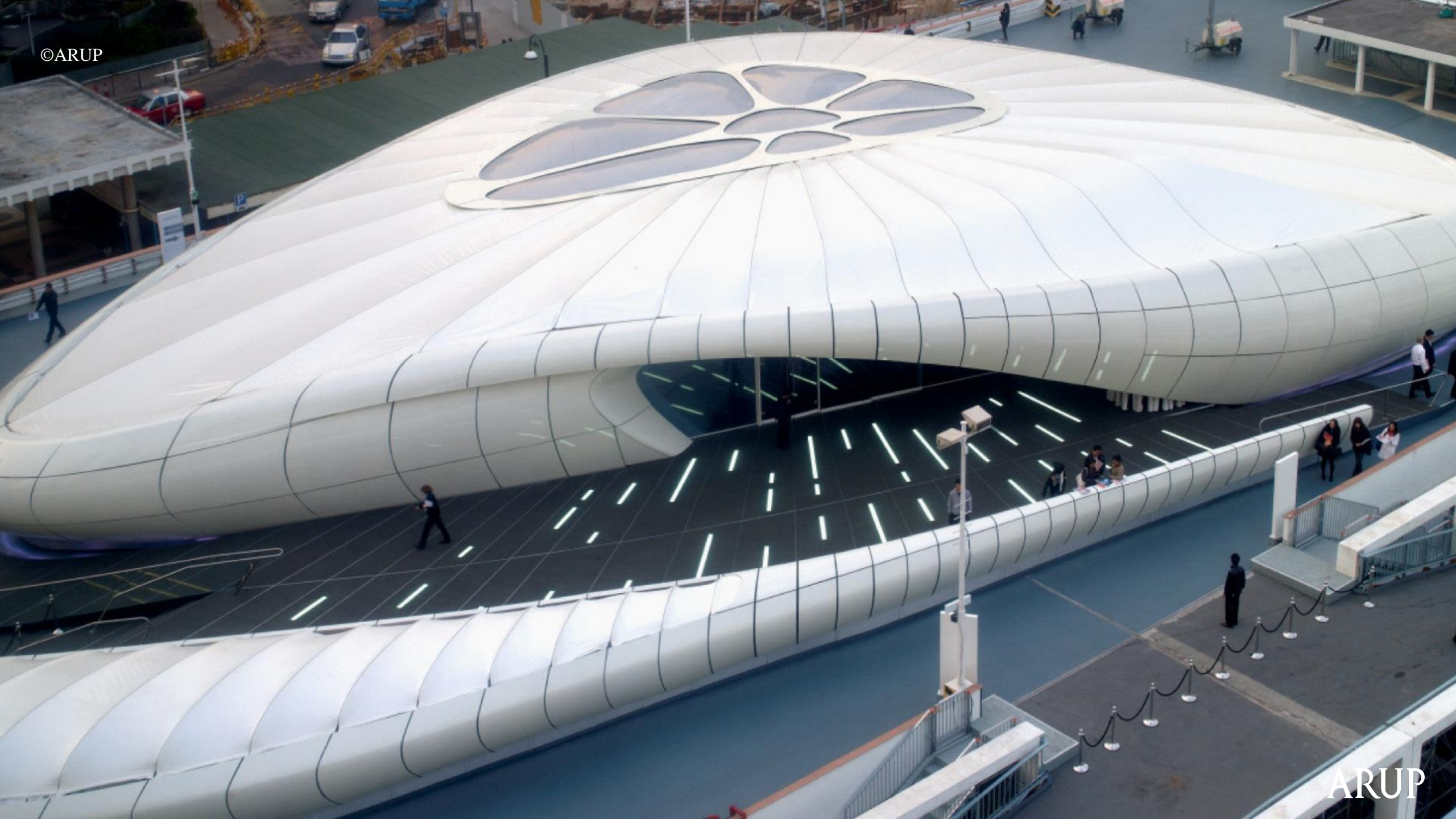
ARUP













Willingness for a 0-risk factor

Lack of homogeneity amongst countries

Innovation is not a shared process with the approval authorities!

What is Arup?

I&S in our projects

I&S in our products

I&S in our future







Contrasting standards lead to compromises in innovation

Standards in some cases are lacking or fragmented

Competing interests could lead to stifling innovation

What is Arup?

I&S in our projects

I&S in our products

I&S in our future



茅台酒

茅台集团

ARUP





?



Standardization can be a mean to plan and structure innovation

Standardization enables innovation to be exploited by:

- Unlocking the business potential
 - Accelerating the process
- Increasing the probability of success

ARUP

guglielmo.carra@arup.com