Intelligent Building Trends
Innovations in Building Envelope

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Arup
What we build - Enclosure
What we build - Hierarchy

- Holistic Design
- Aesthetics & Image
- Environmental Improvement
- Performance - Function
- Enclosure

Holistic Approach

Shelter
What we build – Robust and Stable

- Regulatory codes
- Design standards – local / international
- Familiar range of construction materials
- Well established methods
How We Build – Design Tools
Effective Coordination, conflict resolution and time savings
How We Build – Design Tools
Efficiency and better comfort conditions
How We Build – Prefabrication

Pre-fabrication and quicker assembly
Efficient Composites

Newer Cladding Systems

Lighter Structures

Improved Protective Coatings

Improved Glazing Technology

Plastics
Improvements in size, performance, installed life, aesthetic Choices and overall quality
New
New Material Palette
Metal Composites
Ceramics
High Pressure Laminates
Sandwich Panels
Glass Fiber
Reinforced Panels
Architectural Appendages
Fixed Shades
Fixed Screens
BIPV
LED Facades
Material Improvements

3rd Generation metal coatings

Optimised Glass Coatings

LOW / No VOC Paints and Coatings

Self Cleaning Surfaces

Non Bleeding Silicones

2nd Generation Glass Interlayer
- LED Facades
- Metal Composites
- Ceramics
- High Pressure Laminates
- Sandwich Panels
- Glass Fibre Reinforced Panels

Architectural

- Optimised Glass Coatings
- Fixed Shades
- Fixed Screens
- BIPV
- LOW / No VOC Paints and Coatings
- Self Cleaning Surfaces

Environmental

- 3rd Generation metal coatings
- 2nd Generation Glass Interlayers
- Non Bleeding Silicones

Industrial
Reactive
Next....
Proactive
Active Second Skin

ADIC Abu Dhabi
Active Second Skin

Thyssen Krup AG
Active Second Skin

TU Delft
Photo Bioreactive Skin

Hamburg WihemsBurg
Thermo-bimetals

Do|Su Studio Architecture
Reusable Facades

Arup Sydney
• Smarter Designing Process
• Innovation limited to improvements
• Proactive than reactive
• From the ground up
• Rethink and challenge

Thank You!