

# edilportale<sup>®</sup>

## TOUR 2017

Ristrutturazione, riqualificazione  
energetica, comfort abitativo,  
adeguamento antisismico, BIM



Roofingreen



Brescia, 17 Maggio 2017

**Il Futuro del BIM**

**Angelo Ciribini**

# I Driver

**Obbligo (D.Lgs. 50/2016 e s.m.i.)**

**VS**

**Adozione Facoltativa**

# I Driver

**Strumenti?**

**Metodi?**

**Processi?**

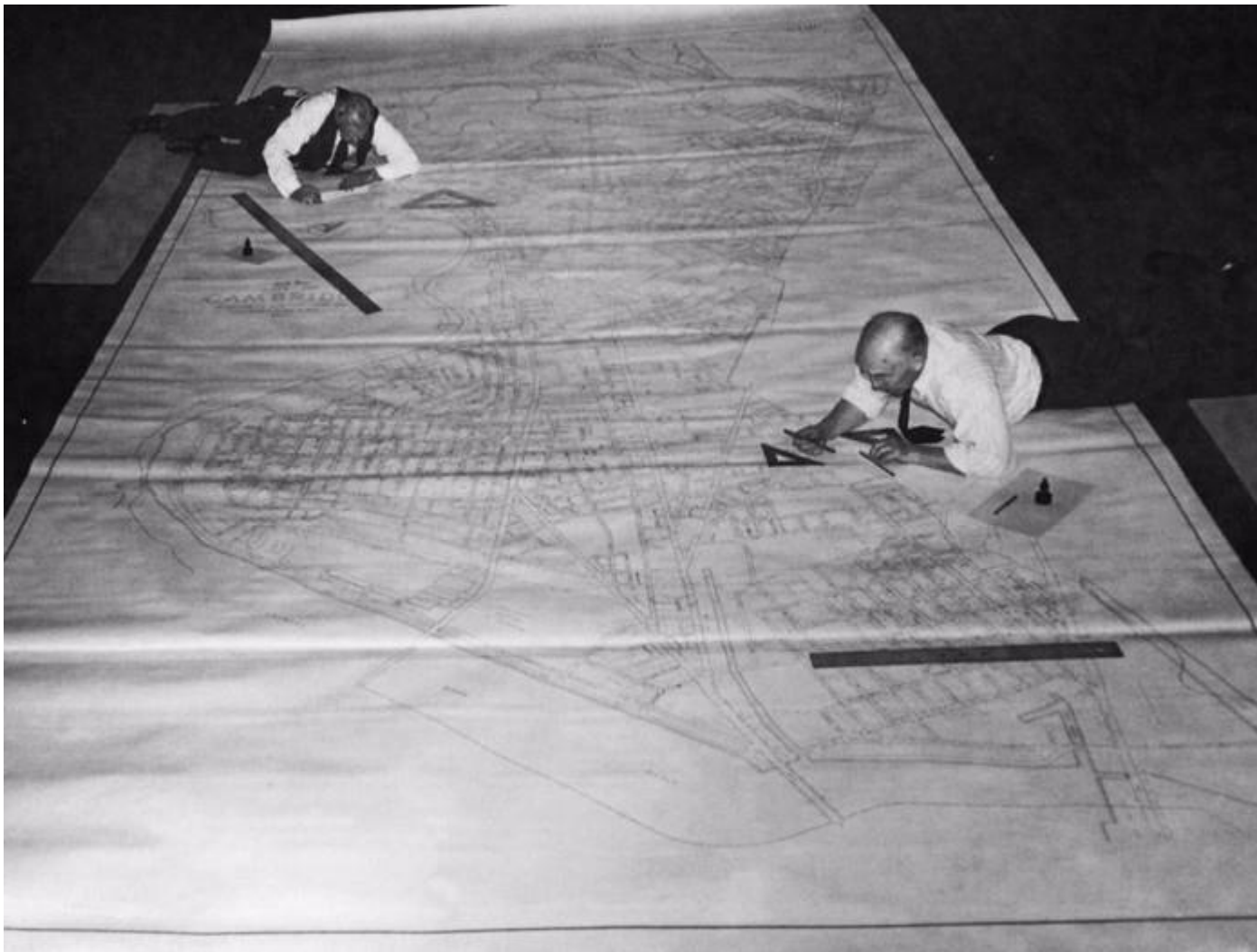
# II BIM

**Rappresentazione?**

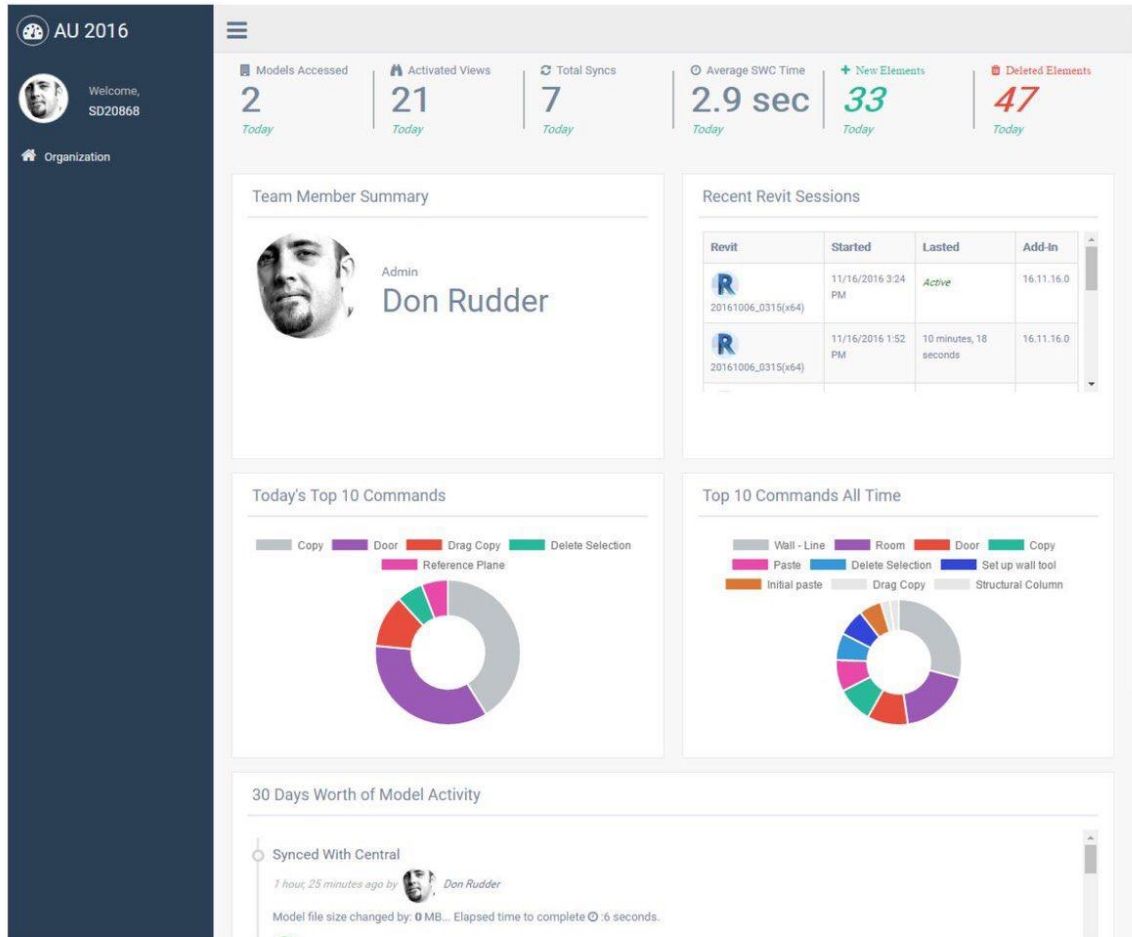
**Simulazione?**

**Virtualizzazione?**

# CAD & BIM



## Rappresentazione dei Dati?



Fonte: Rudder

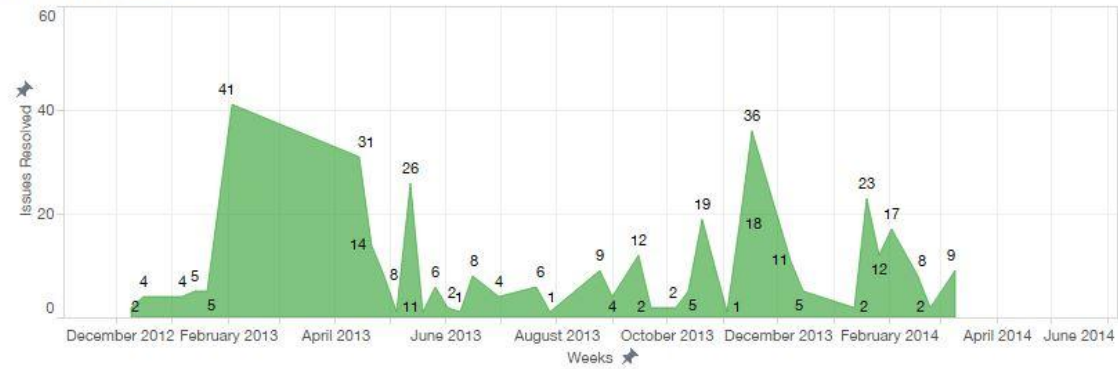


*Data-Driven Business Intelligence!*

Issues Created



Issues Resolved

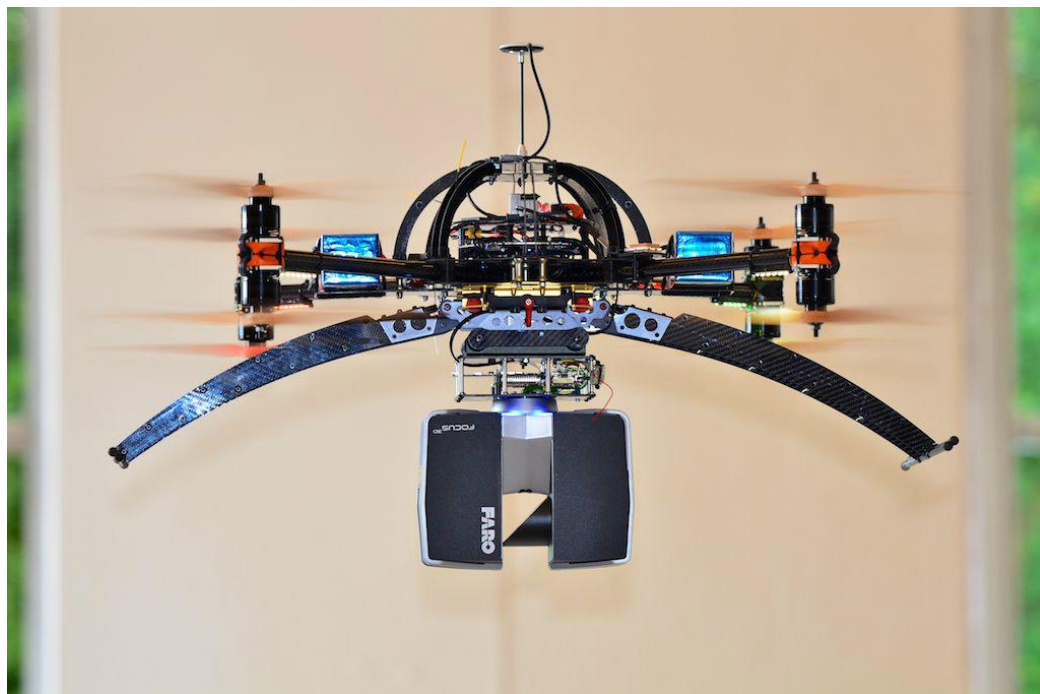


Open Issues

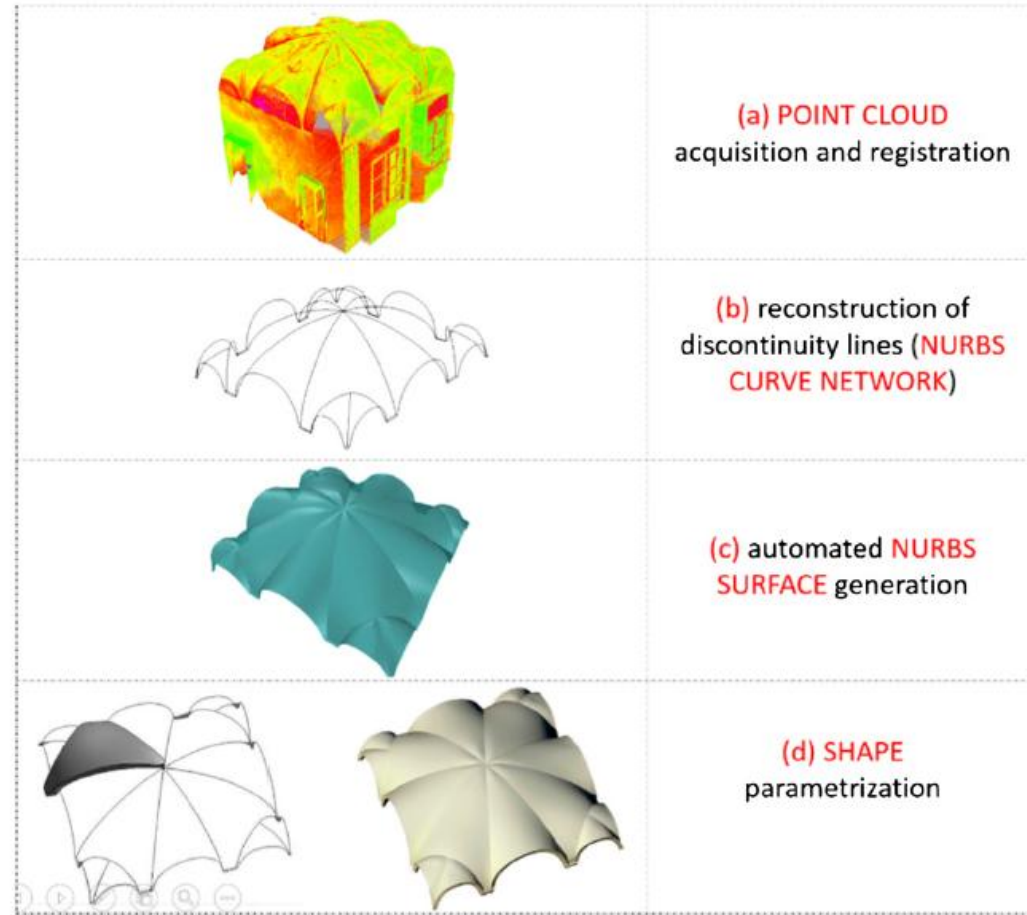
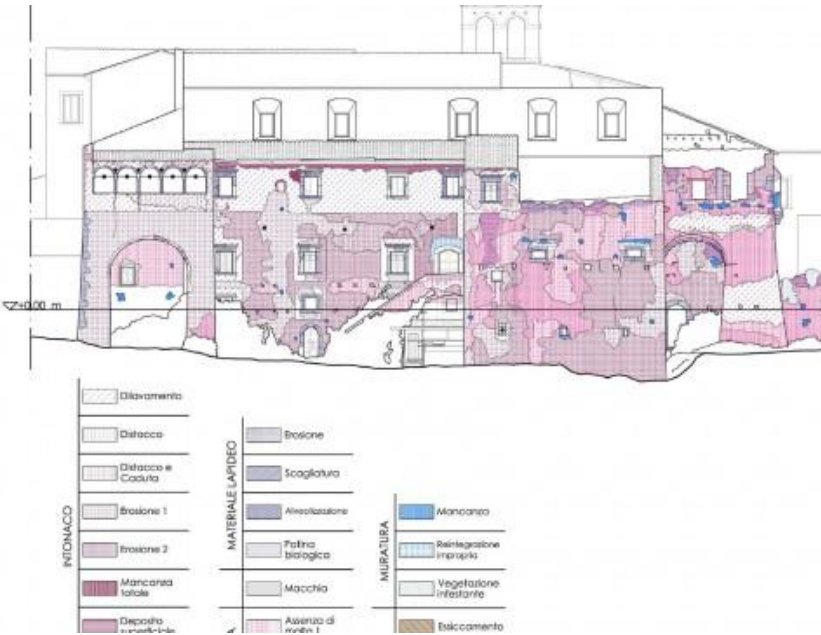




## Oggettività vs Soggettività?



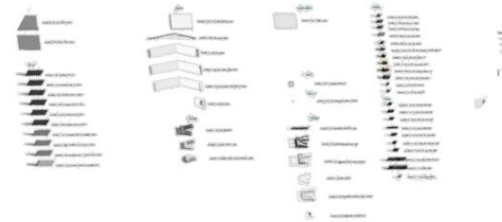
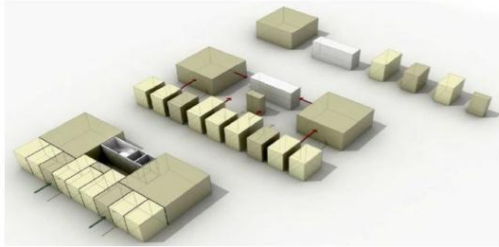
## Analogico vs Digitale?



## Antico o Recente?

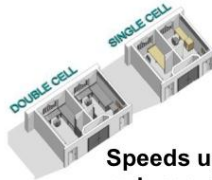
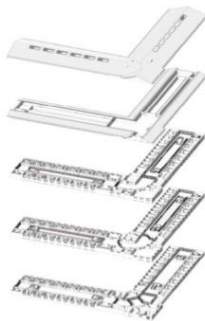
### BIM Library Concept

'Reducing Cost and Increasing Quality Through Standardisation'



Concept

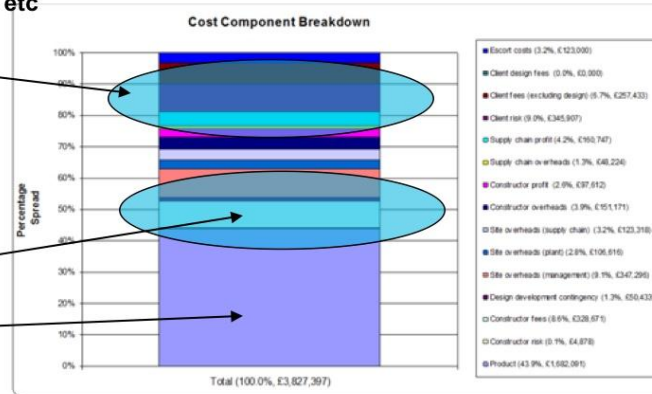
Component



Standardisation / DFMA etc  
Drives down cost here

Speeds up site times,  
reduces risk. Drives  
down cost here  
Drives up value here

Reproduced from MoJ BIM Library Portal June 2013



Component Assemblies

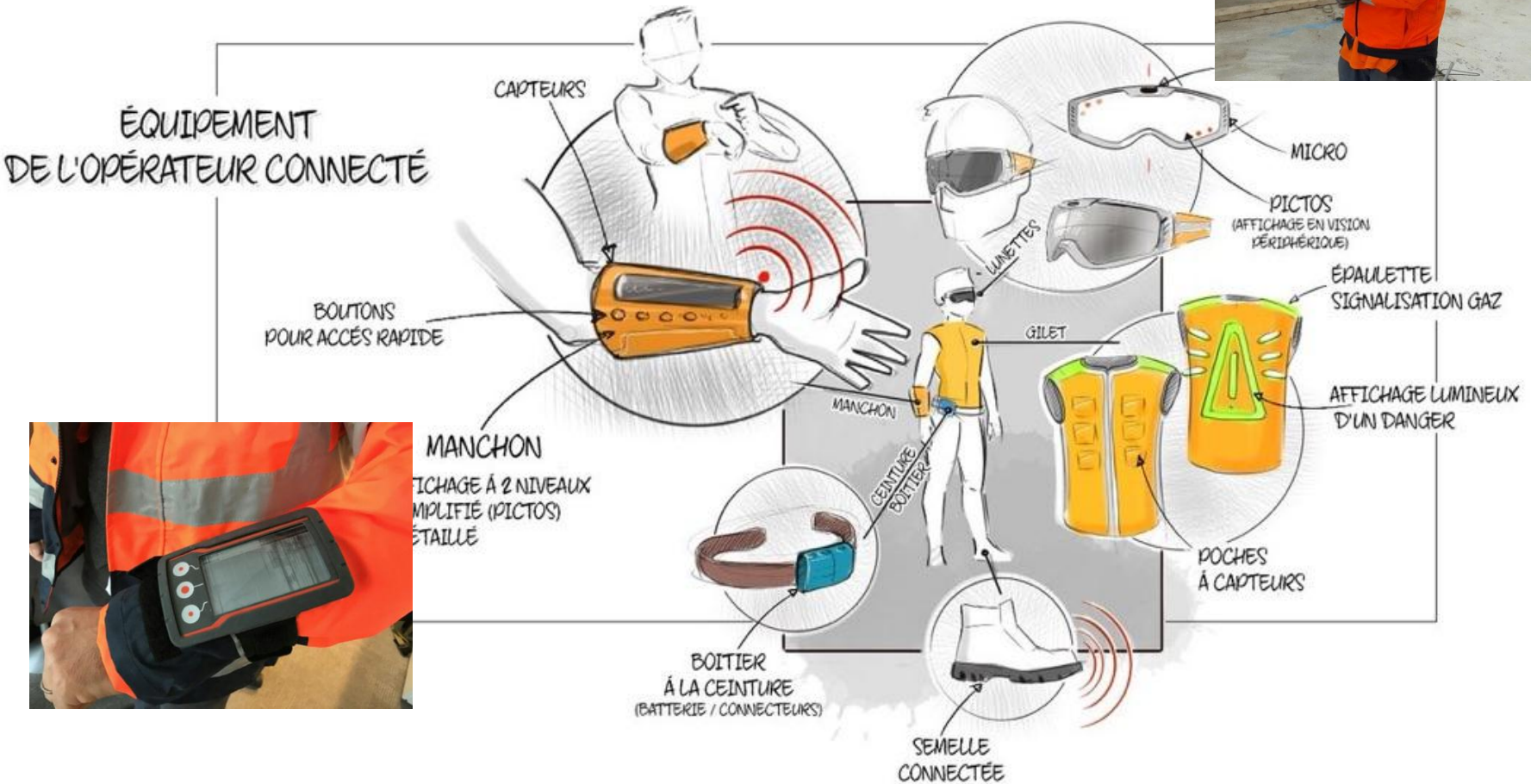
UNCLASSIFIED

## Antico o Recente?



# Real Timed?

## Lavoro 4.0?



# Real Timed?

Lavoro 4.0?



## Lavoro 4.0?



## Lavoro 4.0?





## Lavoro 4.0?



Volvo Construction Equipment Electric Machines: Autonomous Prototypes at #XplorationForum 2016



Volvo Construction Equipment Electric Machines: Autonomous Prototypes at #XplorationForum 2016



10.566 visualizzazioni

# Autonomous?

## Lavoro 4.0?



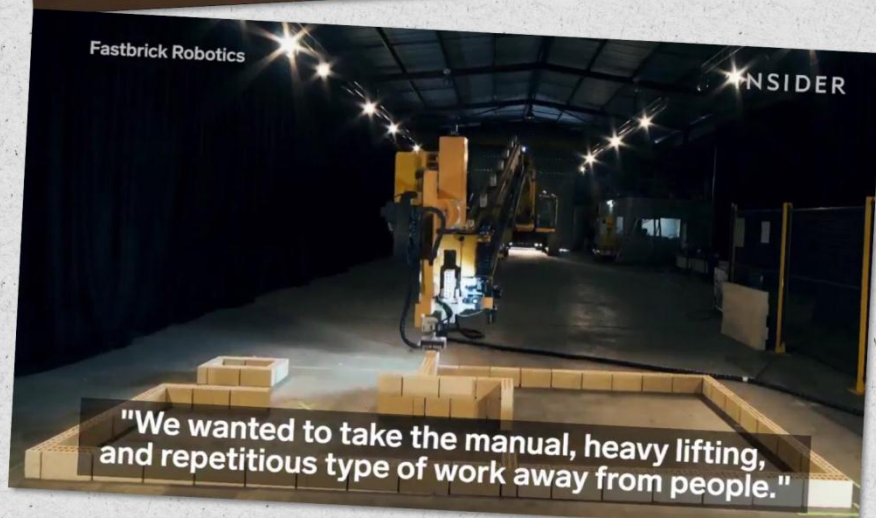
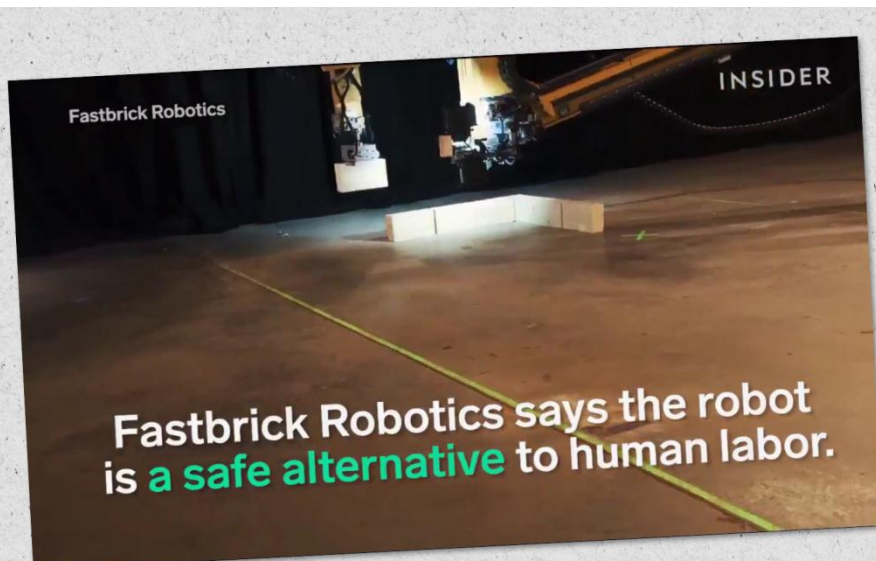
Volvo Construction Equipment Electric Machines: Autonomous Prototypes at #XplorationForum 2016



10.566 visualizzazioni

# Autonomous?

## Lavoro 4.0?



Fonte: Volvo

**Polverizzazione delle Professioni**

**Riduzione delle Imprese Strutturate**

**Desertificazione dei Produttori**

# La Questione

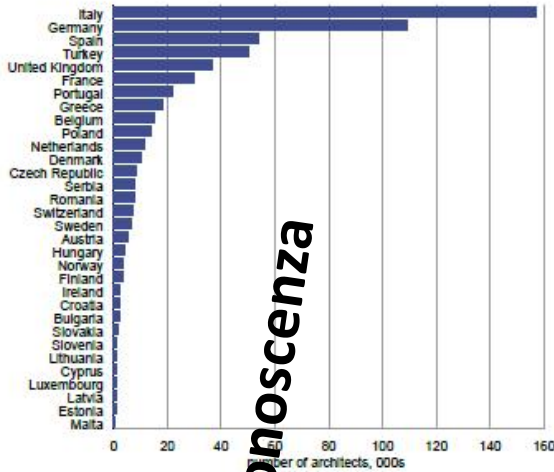
**Frammentazione**

**Individualismo**

**Separazione**

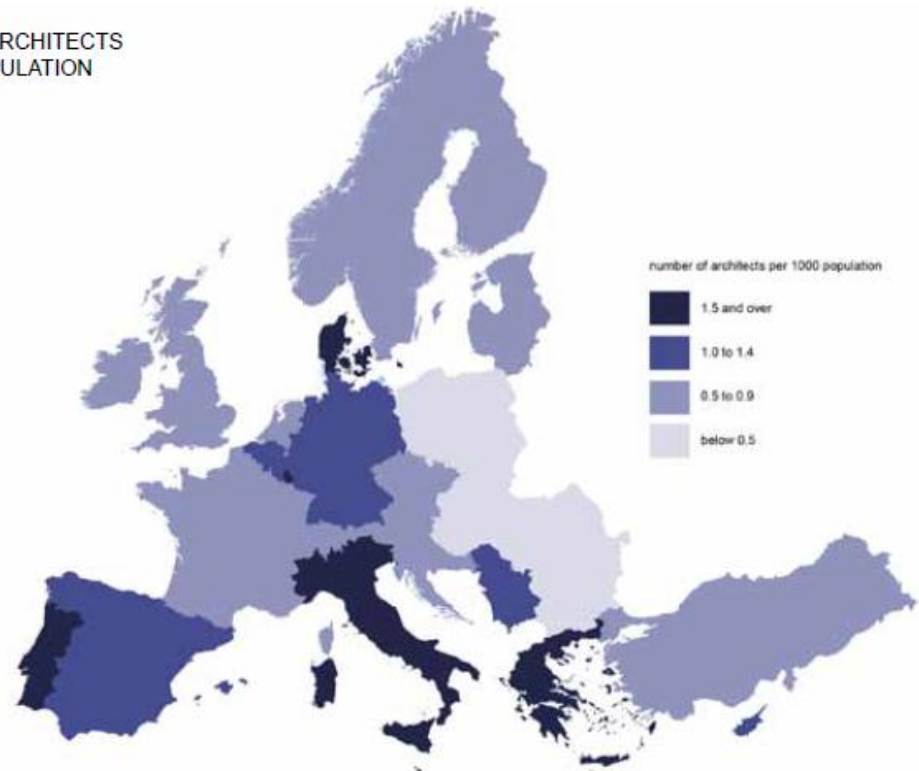
# Il Presupposto

CHART 1-1  
ESTIMATED NUMBER OF ARCHITECTS 2016

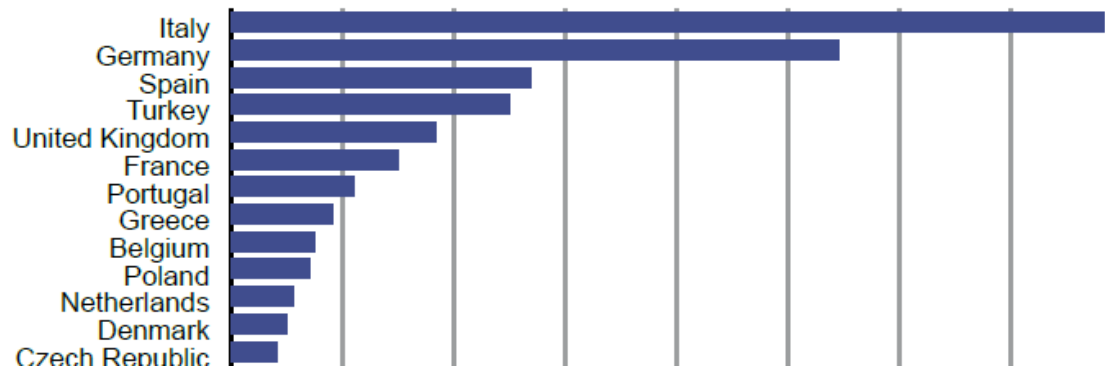


Dimensioni & Conoscenza

CHART 1-2  
NUMBER OF ARCHITECTS PER 1000 POPULATION



Base: all 32 European countries



Redditi & Servizi

ATTUALITÀ | *la Repubblica* | 23

## Pianeta lavoro

Più attività e differenziate: oltre al catasto pratiche fiscali certificate energetici rilievi acustici e architettonici. Ora fatturano il 15% in più del Pil medio pro capite



### Ai raggi X

- 107 mila i geometri in Italia
- 3% sono laureati
- 27.627 euro il Pil procapite
- 31.832 euro il Pil medio di un cittadino
- +13,1% nella media degli italiani
- 49,6% di indipendenti
- 32,7% di laureati

## La rivincita dei geometri più pagati degli architetti

**AL CENSO**



La ripartizione della professione è sbilanciata: il 30 per cento dei geometri sono laureati, il 49,6 per cento sono indipendenti. Il 32,7 per cento sono laureati. I laureati sono pagati di più rispetto agli architetti, che sono pagati di più rispetto ai geometri. La media del Pil medio di un cittadino è di 31.832 euro, mentre quella dei geometri è di 27.627 euro.

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### TERREMOTO ITALIA

La Fondazione Internazionalmente Lions LCP ha ideato un fondo dedicato per realizzare Progetti di Ricostruzione

Unica un contributo con la causale TERREMOTO ITALIA

Il vostro contributo con la causale TERREMOTO ITALIA

Associazioni Amiche Lions Clubs International Foundation Account No. 714687112

INSIEME POSSIAMO ESSERE LIONS

1917-2017: UN CENTENARIO DI SOLIDARIETÀ

www.lions.it

## Collaborazione e Integrazione?





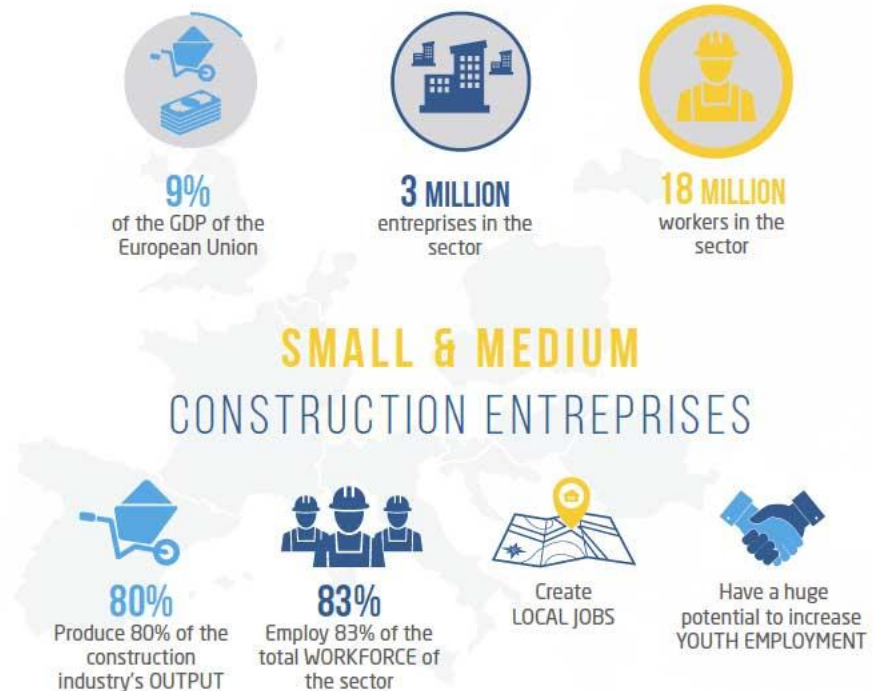
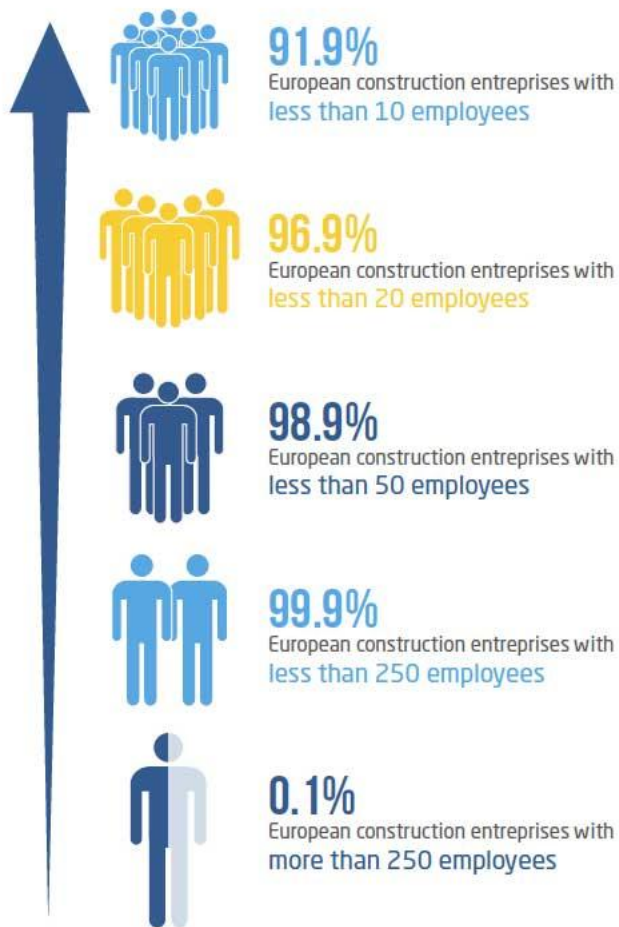
CHART 3-2  
AVERAGE SIZE OF ARCHITECTURAL PRACTICES



Fonte: ACE

# Il Presupposto

## THE CONSTRUCTION SECTOR



## YOUNG PEOPLE & WOMEN IN CONSTRUCTION

**90% MALE**

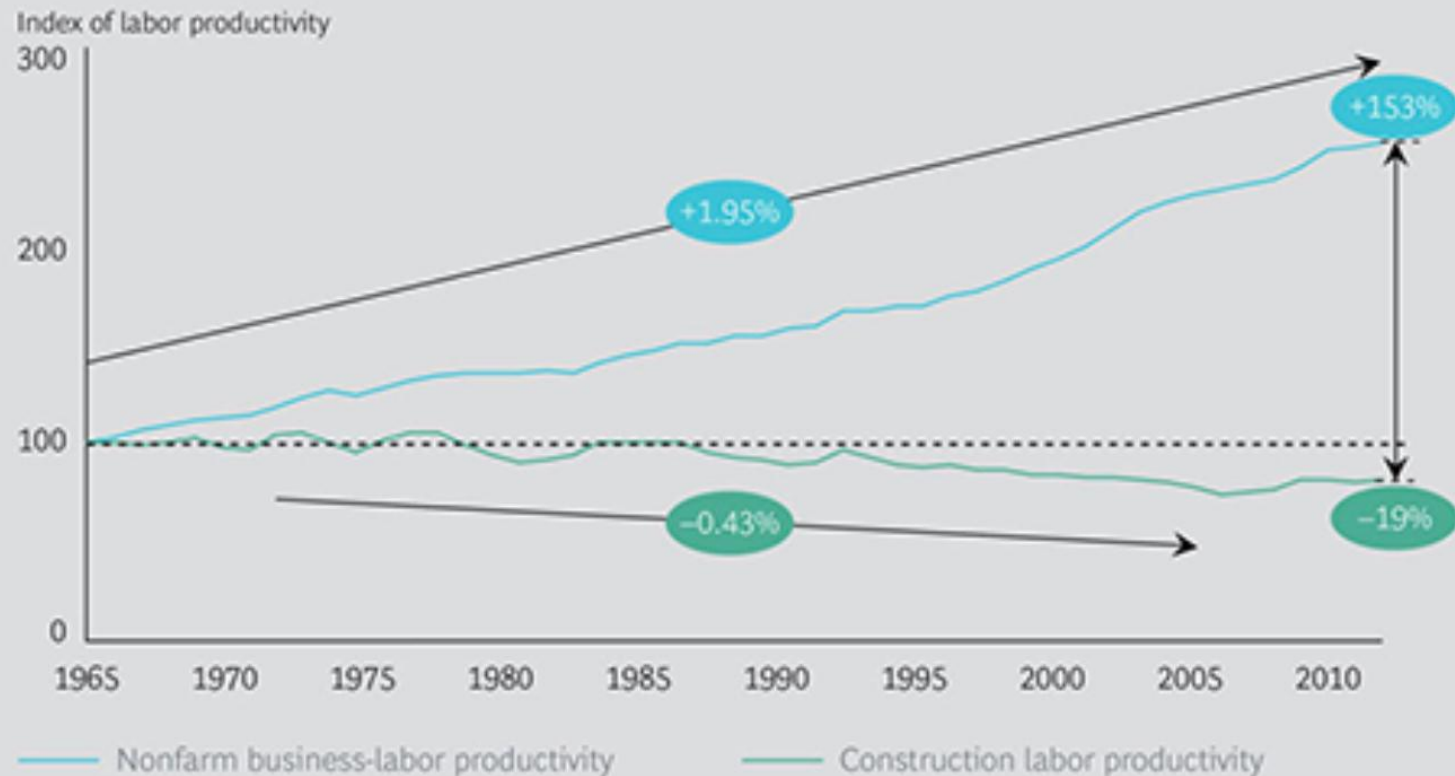
**10% FEMALE**

**8% YOUNGER THAN 25**

# Il Presupposto

## Efficacia & Valore

### Labor Productivity in the Construction Industry Consistently Trails the Rest of the Economy



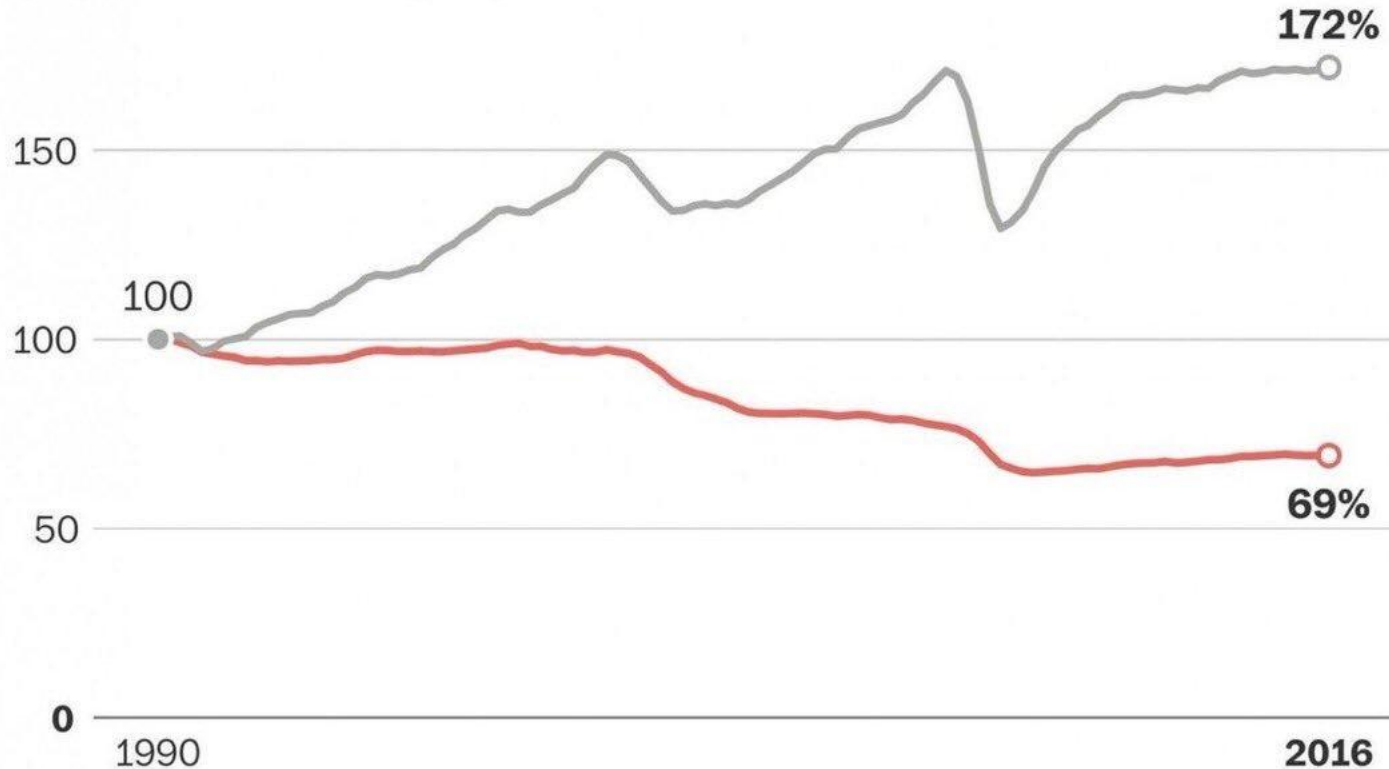
Sources: Global Vantage; Compustat; Bloomberg; National Bureau of Economic Research; BCG analysis.

Note: ECS = engineering, construction, and services. The peer set is based on U.S. companies with ECS-related Standard Industrial Classification codes. Financials are adjusted for inflation and indexed to 1964.

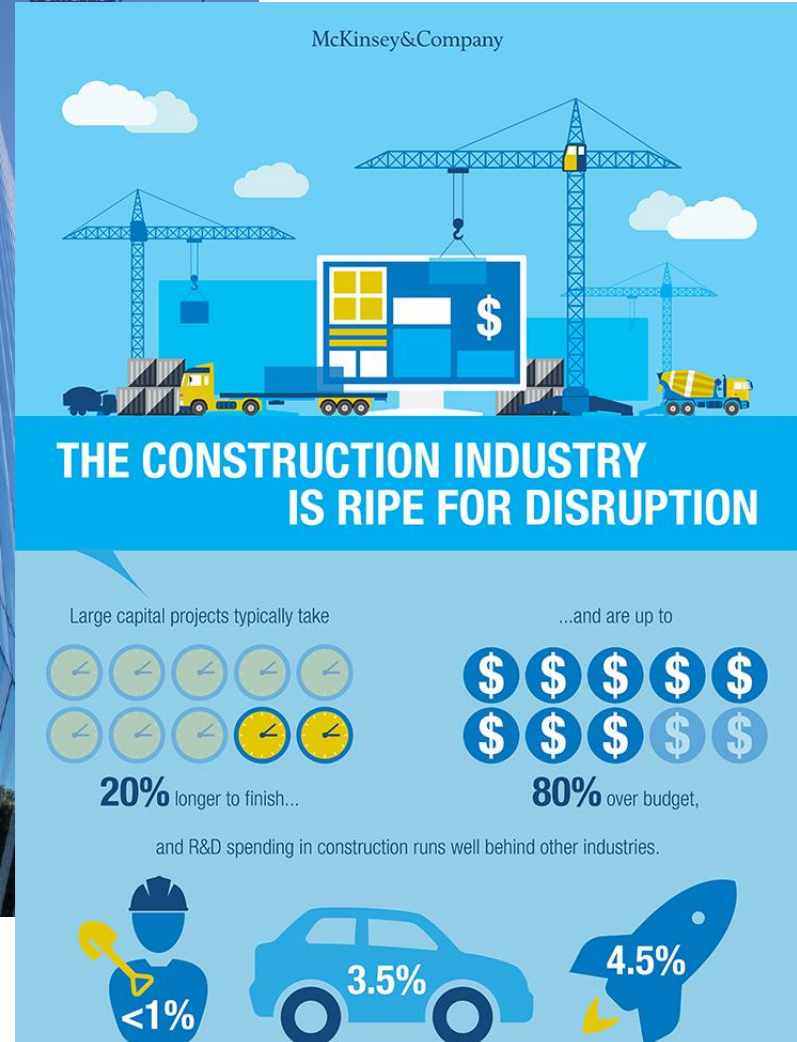
## Efficacia & Valore

### Manufacturing output rose even as employment fell

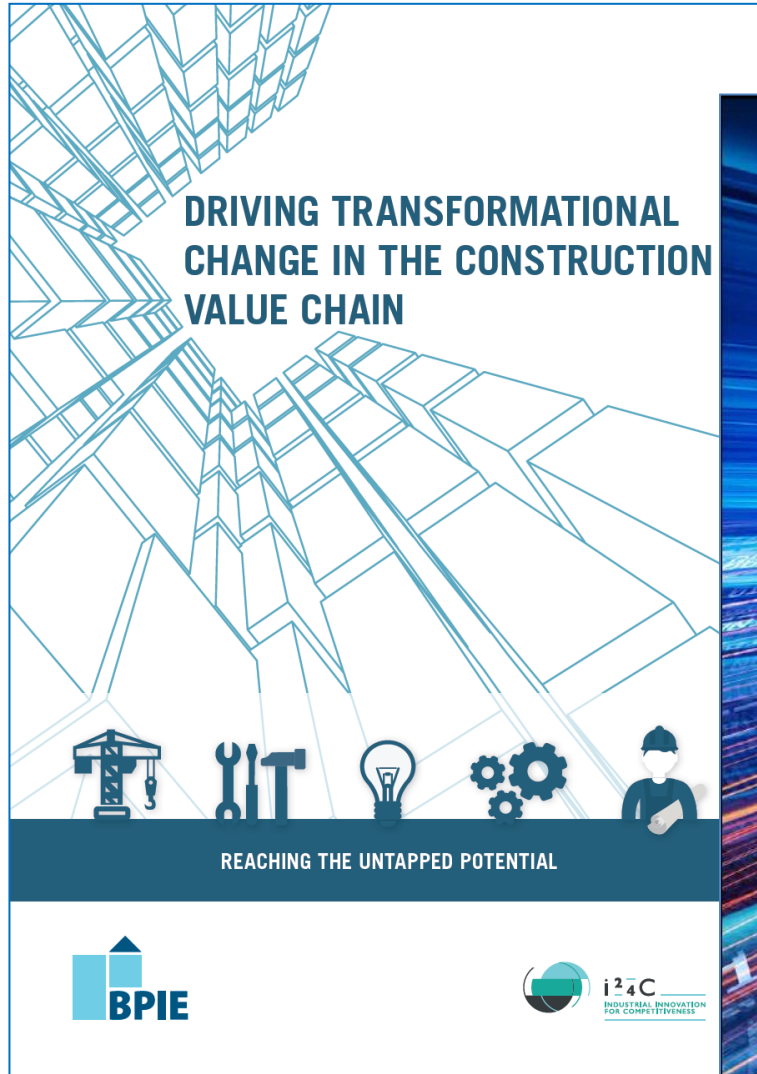
Since 1990, manufacturing output has increased by 72 percent. But manufacturing employment has fallen by 31 percent.



*Liberare il Cambiamento?*



*Misurare la Trasformazione?*



# La Sfida

*Misurare la Trasformazione?*



## SAME DATA

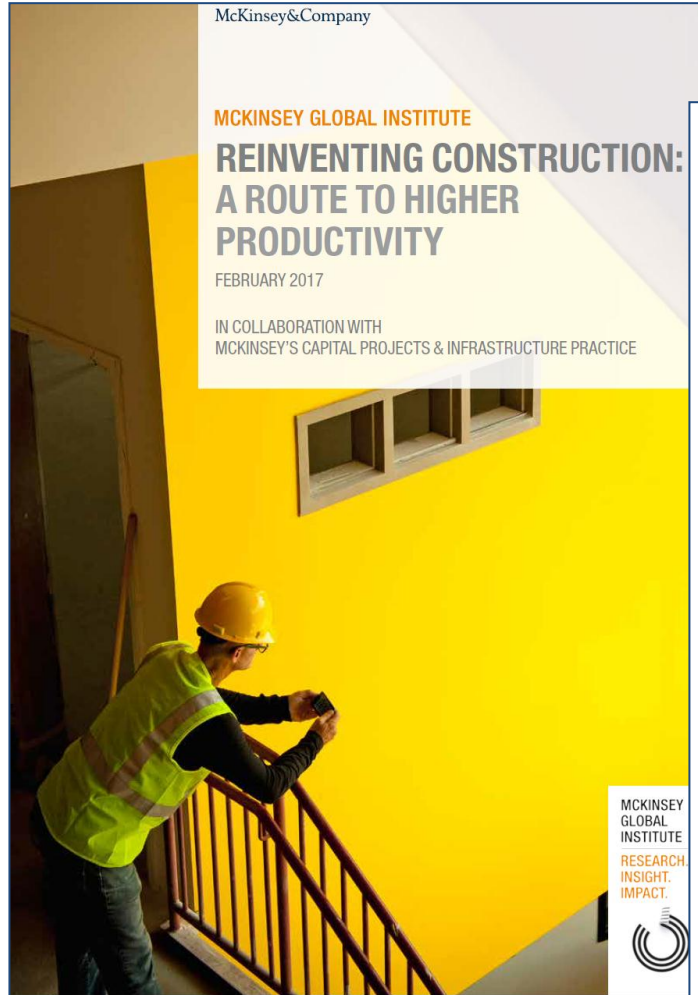




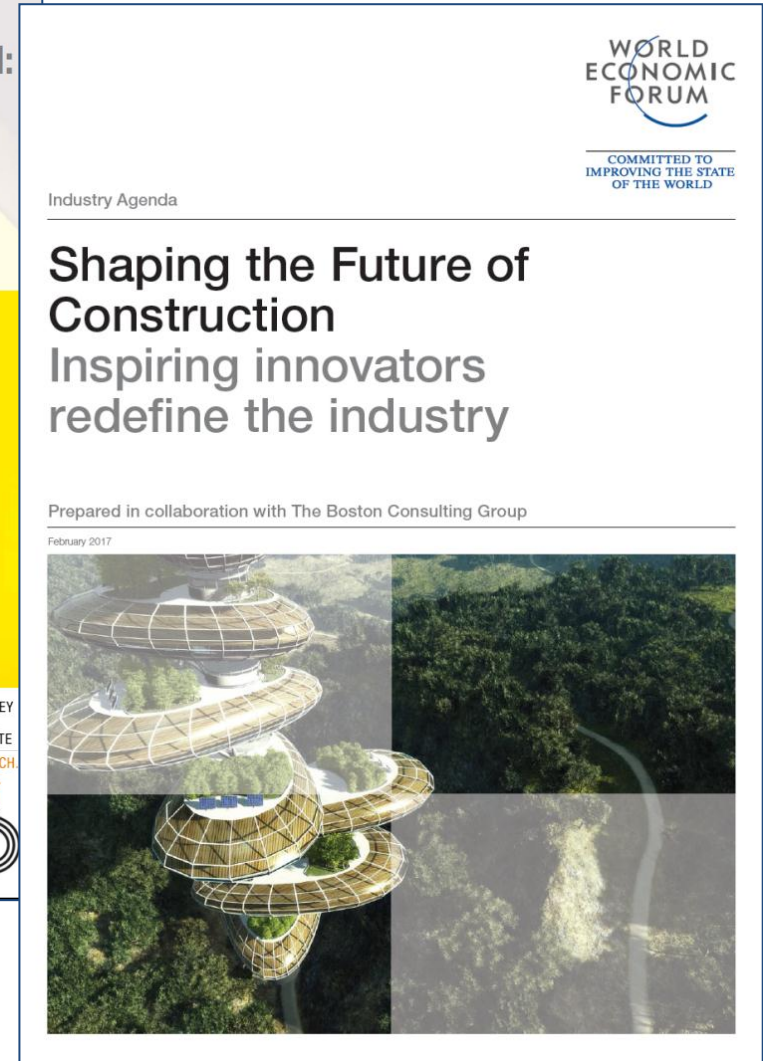
**Digits = Metrics?**



Re- Ri-



Fonte: McKinsey & WEF

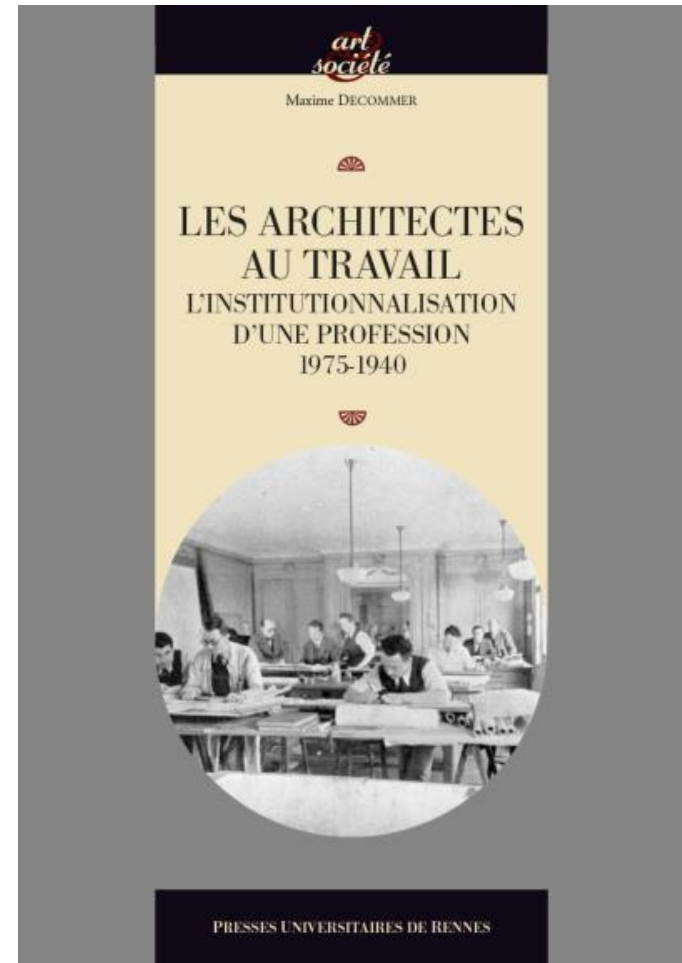
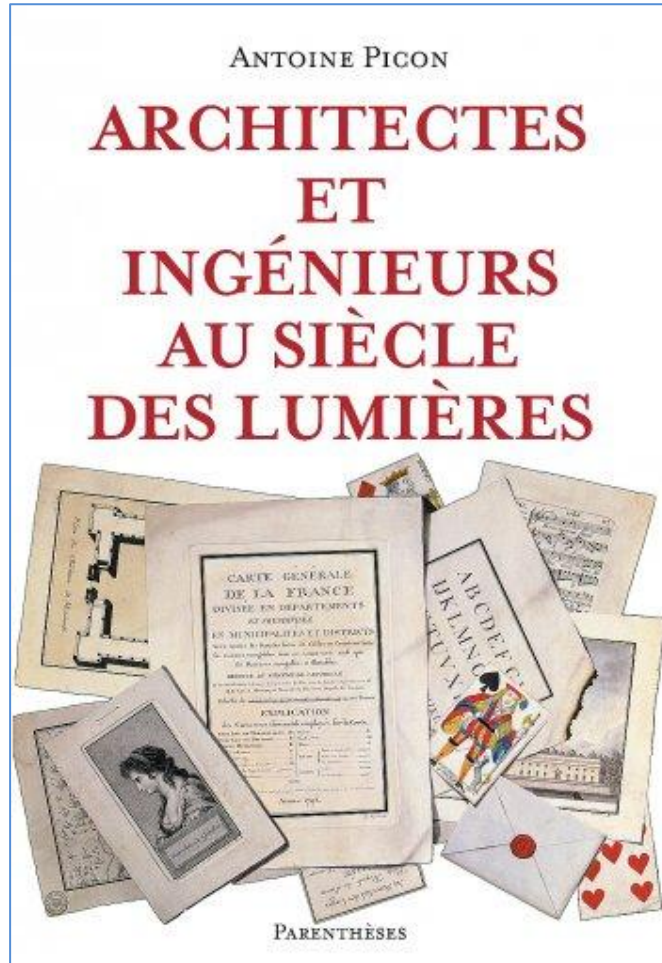


# Lo Statuto e l'Identità

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## Istituzionalizzare le Professioni



# Lo Statuto e l'Identità

## Destabilizzare le Professioni?

Carlo Ratti

Architettura  
Open Source

Verso una progettazione aperta



# Lo Statuto e l'Identità

## Professioni & Ambiente Costruito

Professional Practices in the Built Environment

27 - 28 April 2017

University of Reading, UK

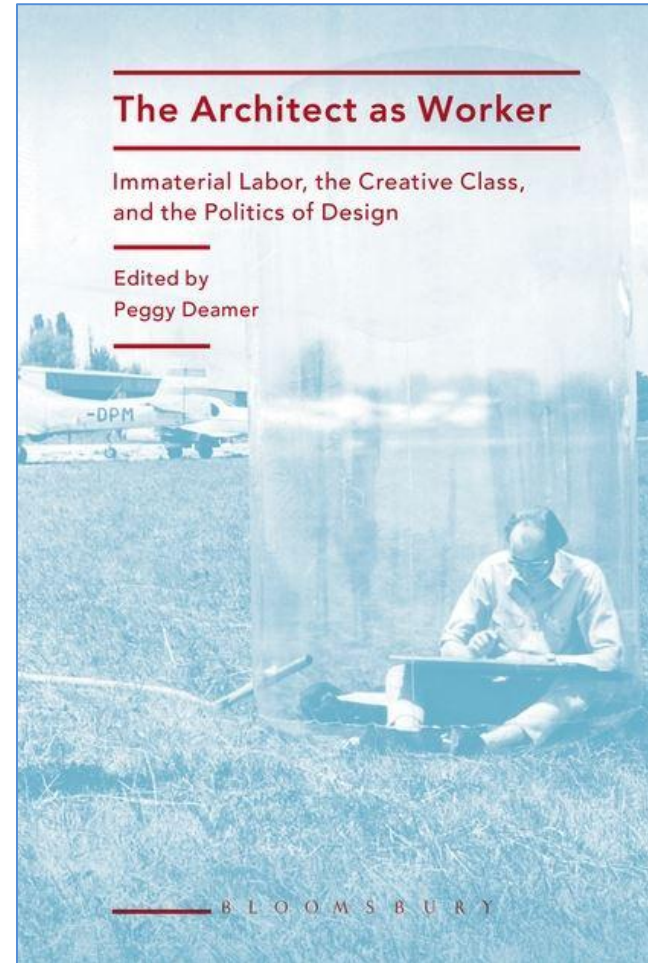
Conference Proceedings

Rowena Hay and Flora Samuel

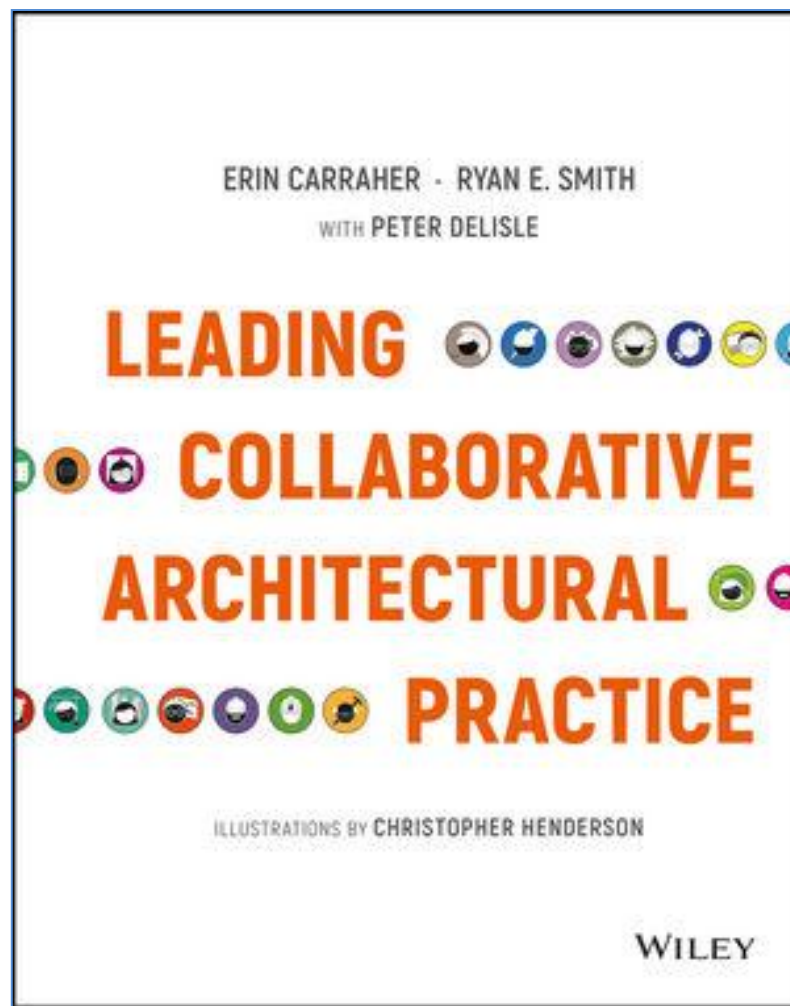
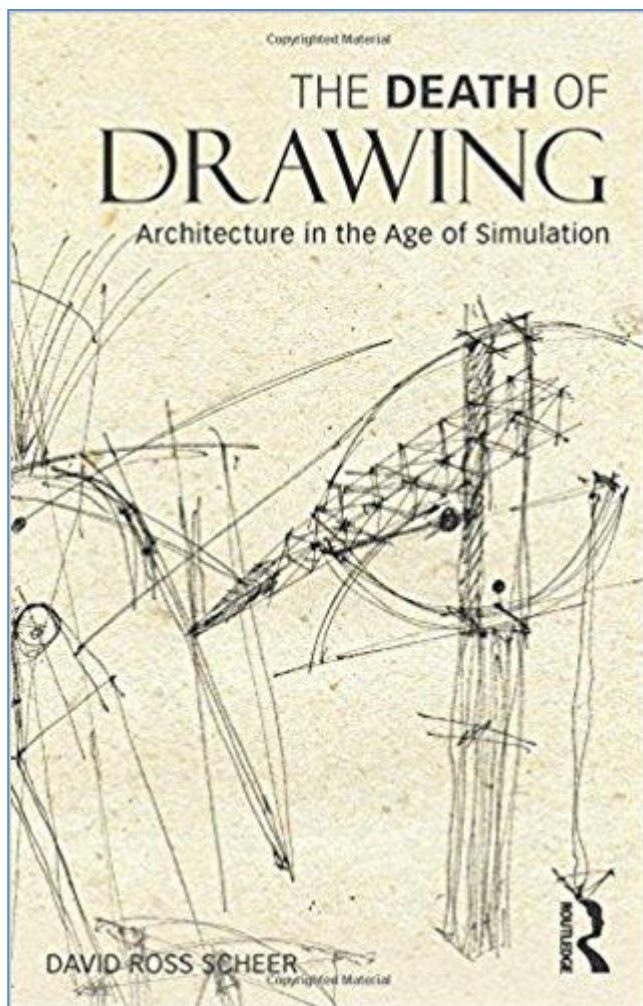


# Lo Statuto e l'Identità

## Professioni Digitalizzate & Imprenditive



## Fine e Rinascita degli Attori?





The emergence of visual scripting has empowered architects—once sidelined from the opaque world of software design—to craft their tools from the ground up. No longer are designers subservient to the tools given to them by the software industry. The tools are built for infinite expansion and customization, allowing the design process to include the making of the design tools themselves. The savviest teams are integrating digital tools in their design process as the fundamental generators of design, offering the parameters of algorithmic modeling to their team of experts to inform the core ideas of their work. In the most successful cases, these same tools are shepherding design data from early conception through the ultimate fabrication of componentry, reestablishing the continuum of creation that was the hallmark of the master builder.

Neither the new terms of engagement nor the emerging tools of the trade can be effective without appropriate leadership. The last fifteen years have seen the emergence of a new generation of vanguards who embrace collaborative design in powerful ways. These leaders are characterized by a few key attributes that differentiate them from

their predecessors. They share a common commitment to enabling a performance-based design process where experts from across the supply-chain are meaningfully engaged in the development of design solutions. They acknowledge that successful design is a collaborative, cross-disciplinary effort. They see their role as the primary curators of an interwoven and dynamic collaborative environment.

In this new world, napkin-sketchers and their teams of drafters have been discarded in favor of a dynamic orchestration of adaptive, collective design processes that challenge entrenched, contentious project delivery models through changes in attitude and action in order to solve complex problems. Adaptive leaders have begun to emerge as those who provoke positive change and cultivate an environment of optimism, creativity, and potential. The emerging models of collective execution enable diverse teams of talented individuals to achieve what may never before have been possible.

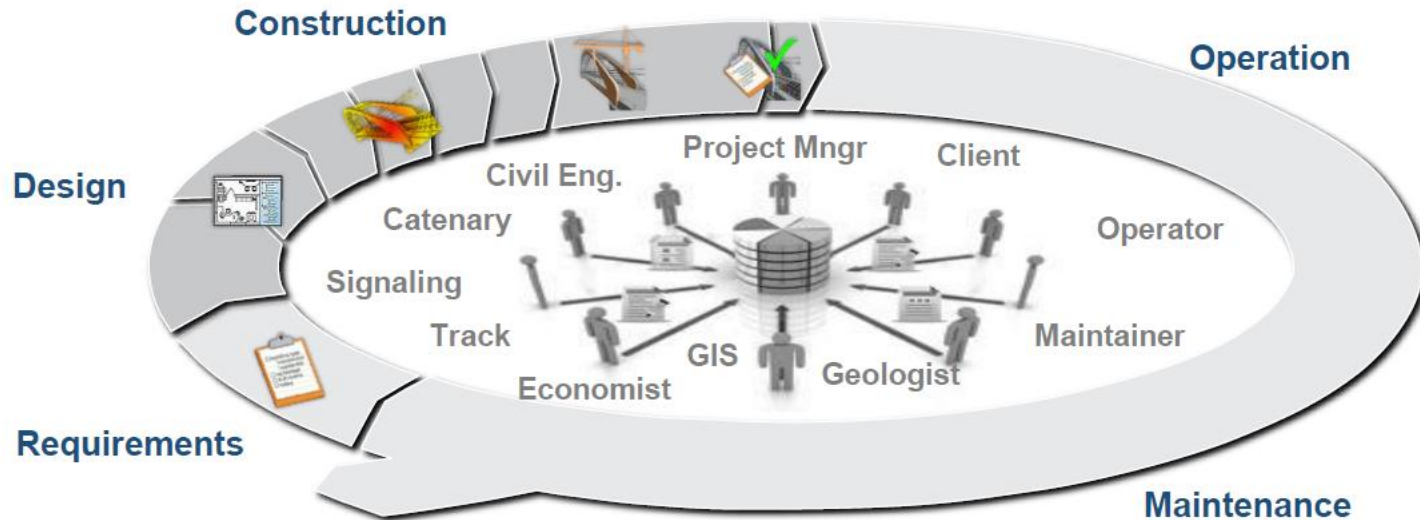
Stephen Van Dyck  
Partner, LMN Architects





# I Driver

The transformation in railways infrastructure will come from technologies, but also and mainly from our capacity to organize an efficient collaboration along the whole value chain.



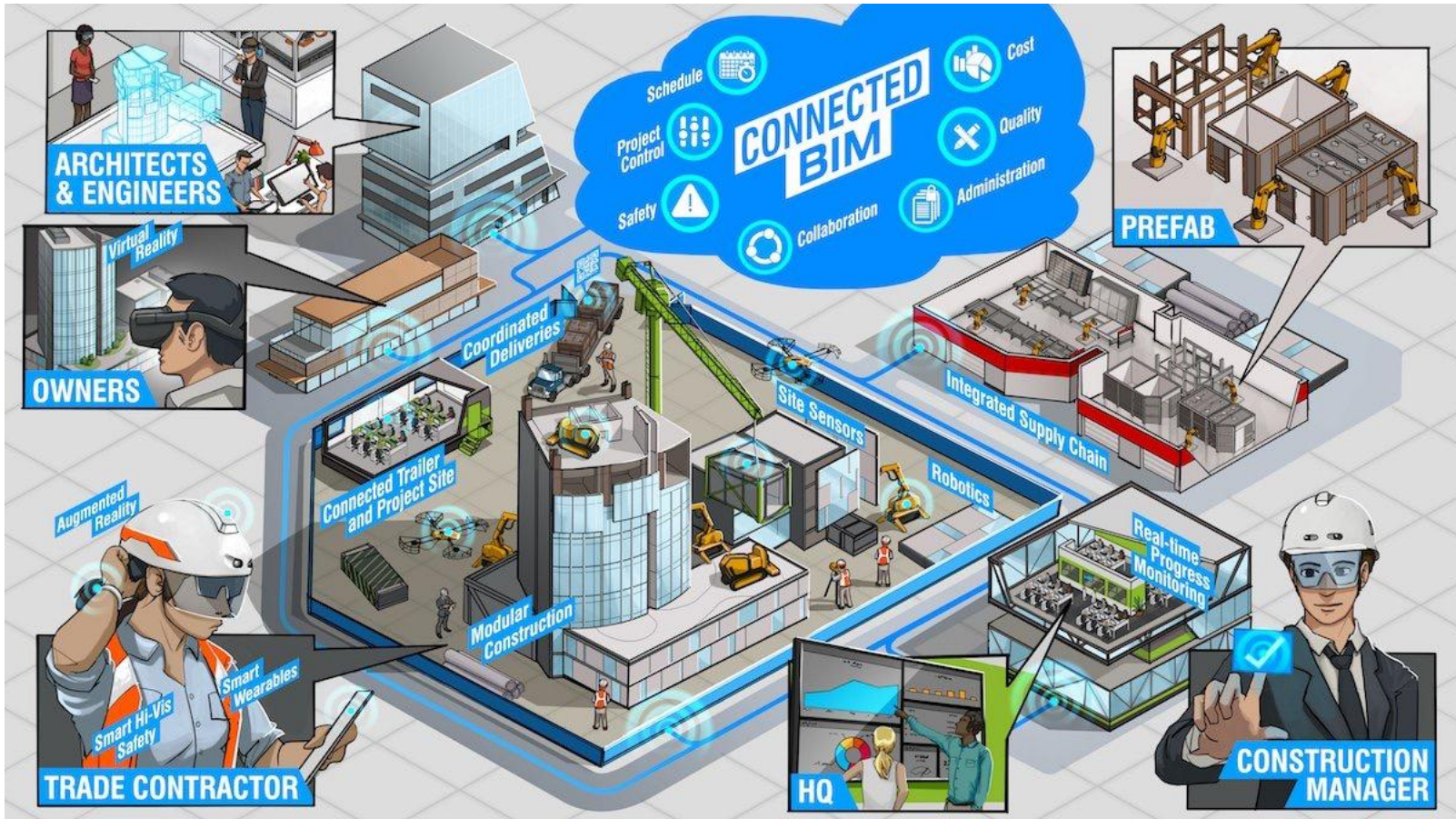
One major leverage for efficiency in collaboration, is to implement **Digital continuity** all along the infrastructure life cycle and operation.  
*(Common information shared by all contributors to a process)*

# Il Cammino



# Lo Scenario

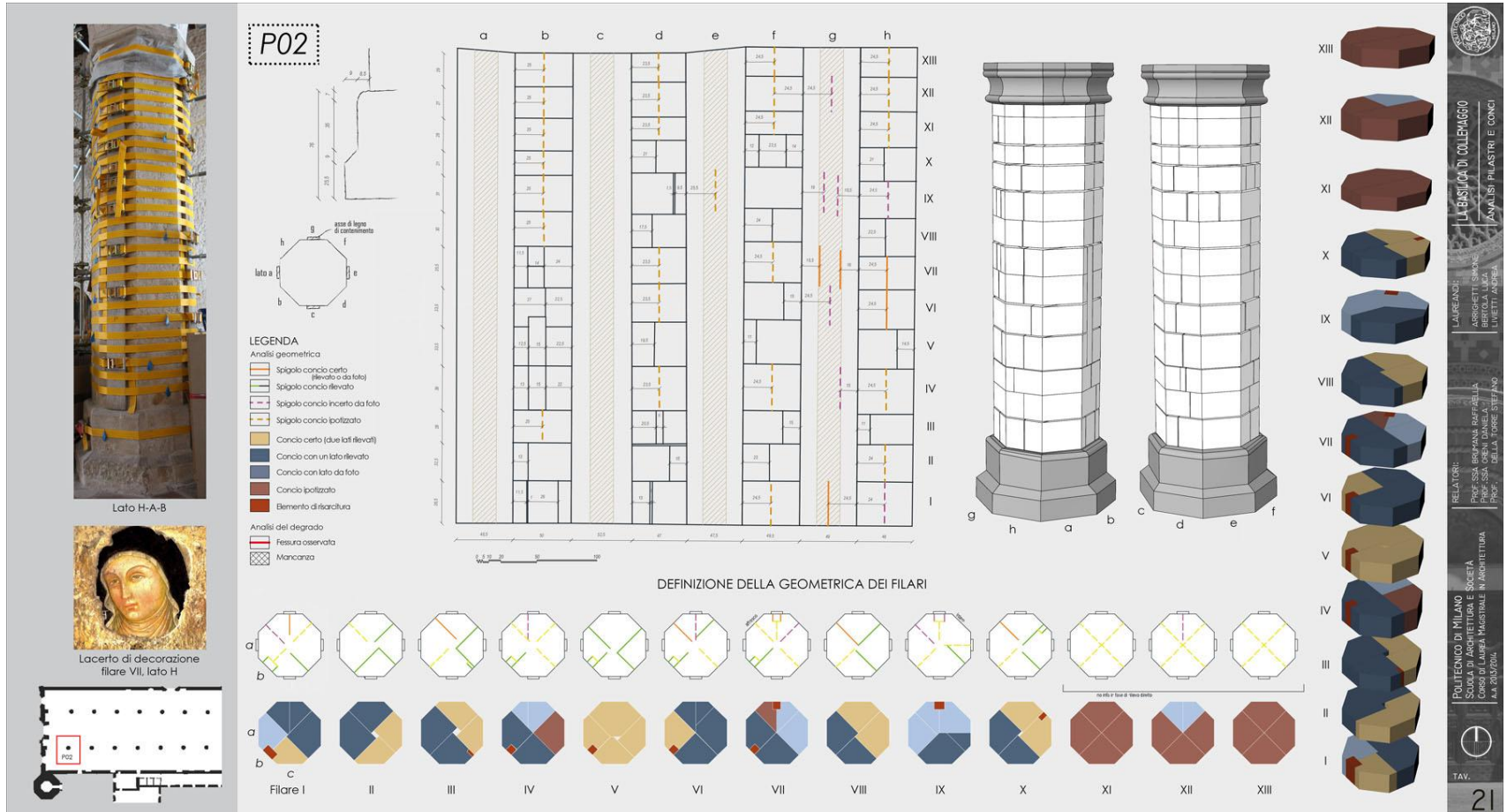
## Digitally Enabled



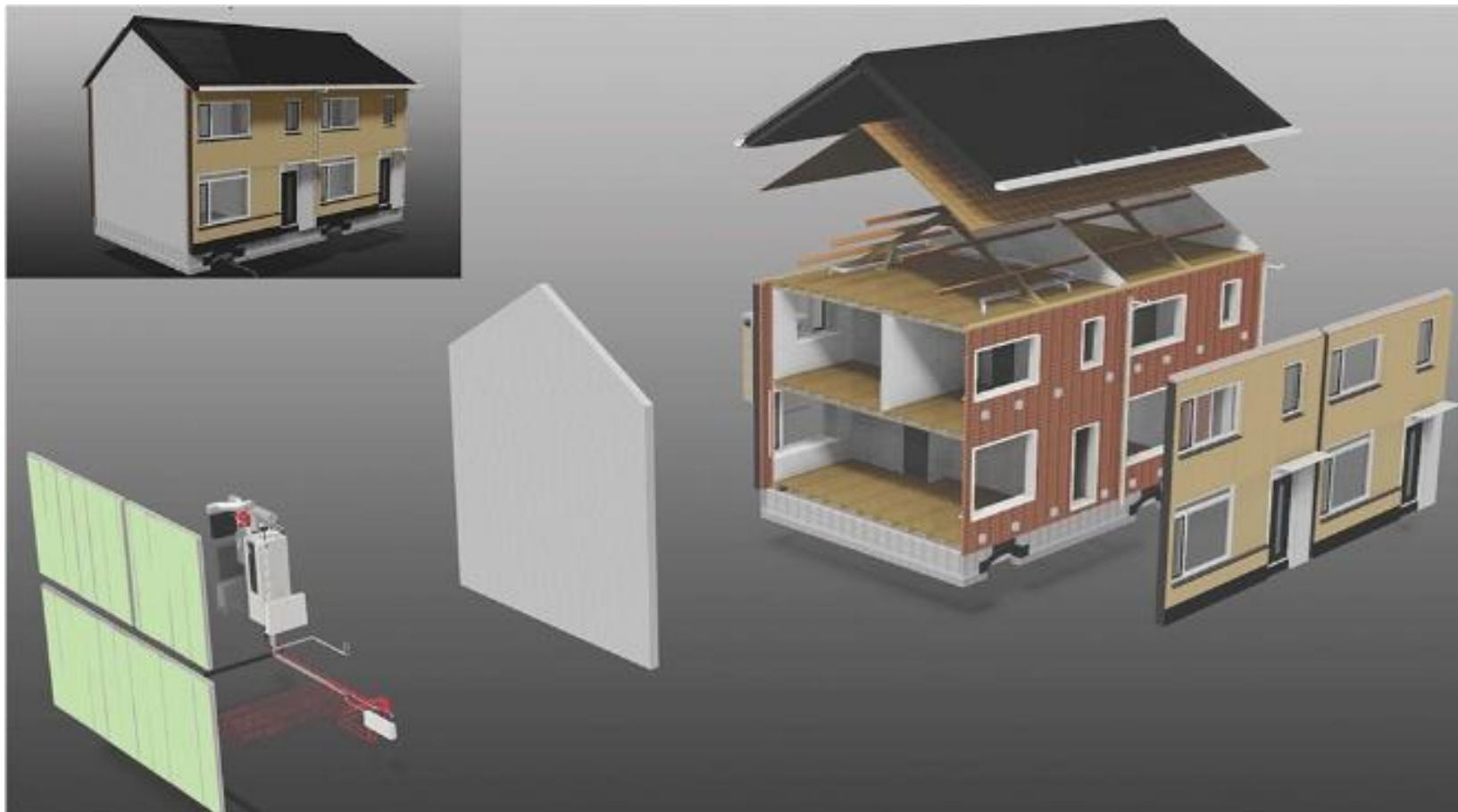
## Resilienza & Resistenza del Costruito



## Digitalizzazione dell'Unicità (!)

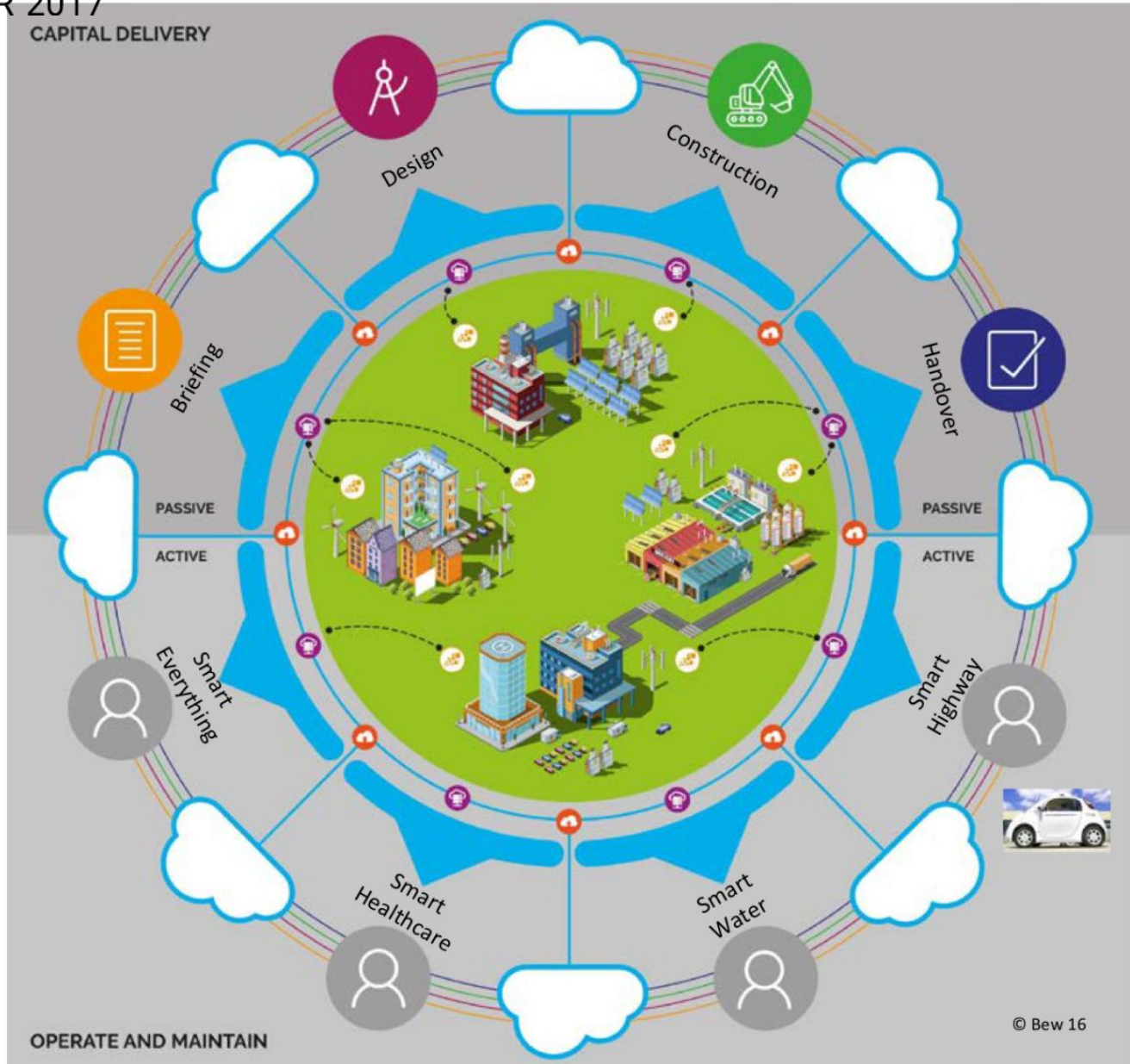


## Digitalizzazione della Ripetitività (?)



# Lo Scenario

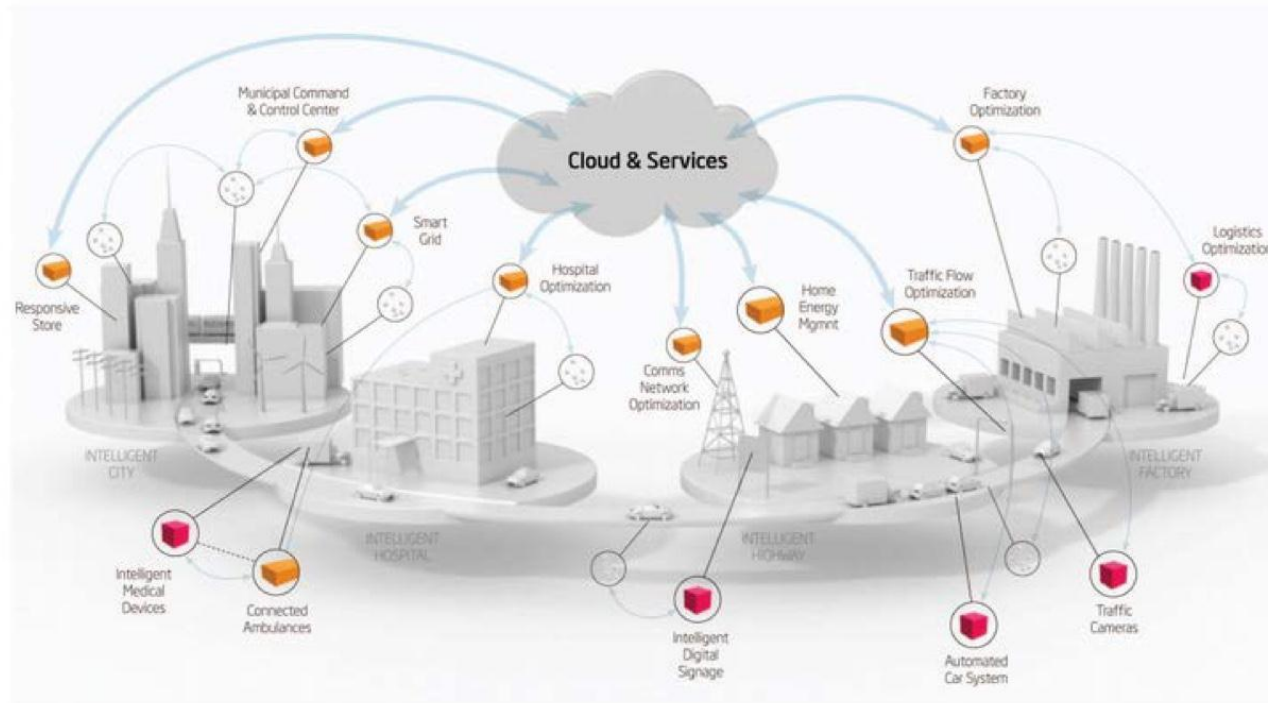
Smart Cities?





## Beyond 2016: Level 3 BIM - Smart

Smart Cities?



# La Disintermediazione

Ricomporre le Professioni e i Mestieri?

# COCONTEST



**Decreto del MIT**

**UNI 11337**

**ISO 19650**

# Il Progetto Con-corrente

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TOUR 2017

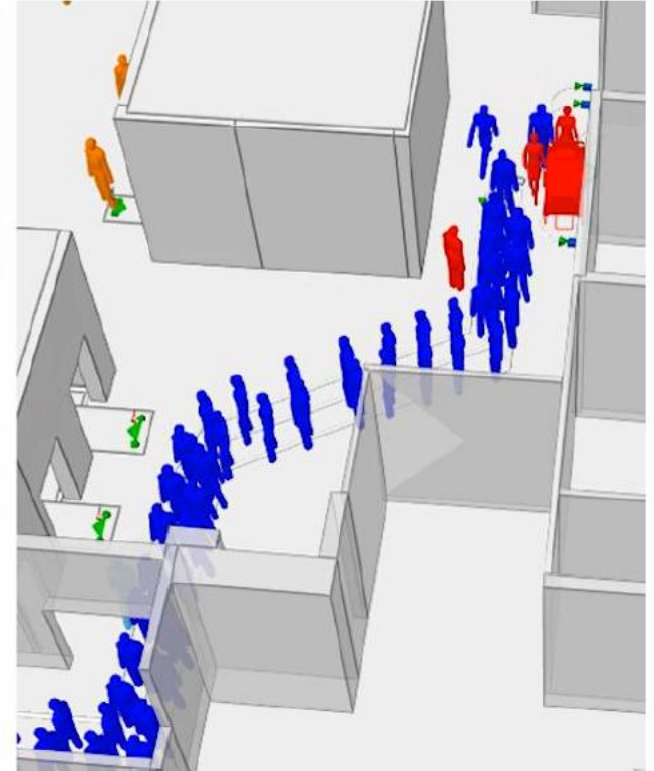
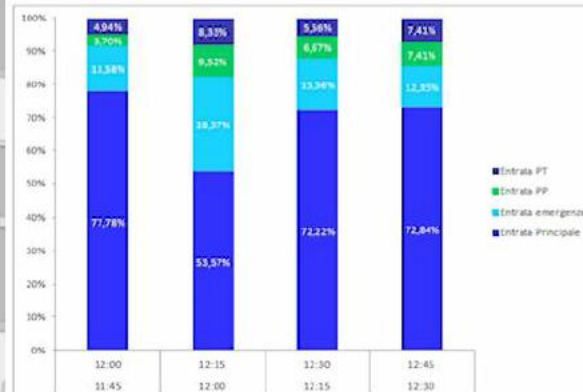
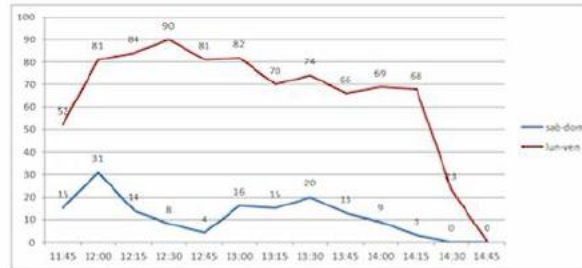
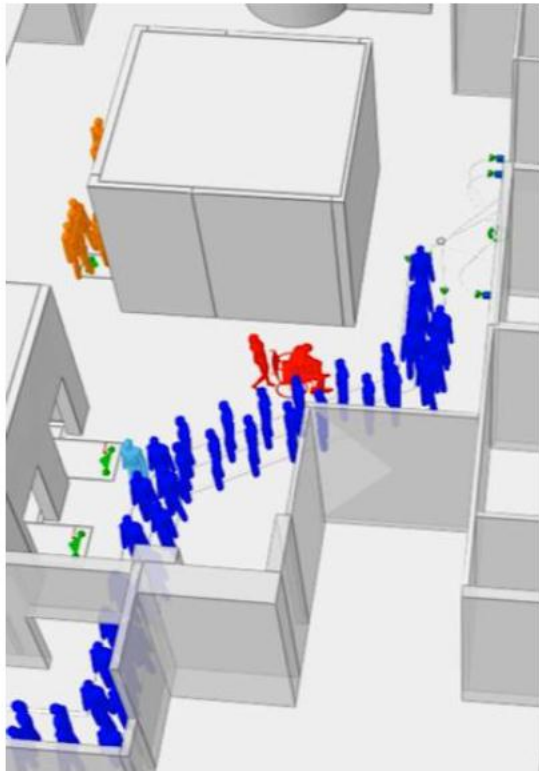
## Verso il Real Time Design?



Fonte: Autodesk, Microsoft & Reply

# Il Progetto dei Flussi

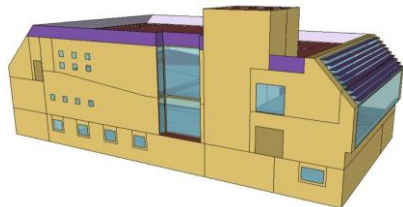
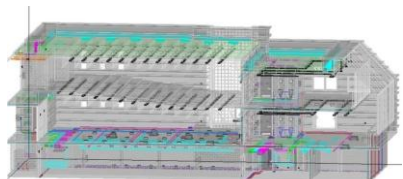
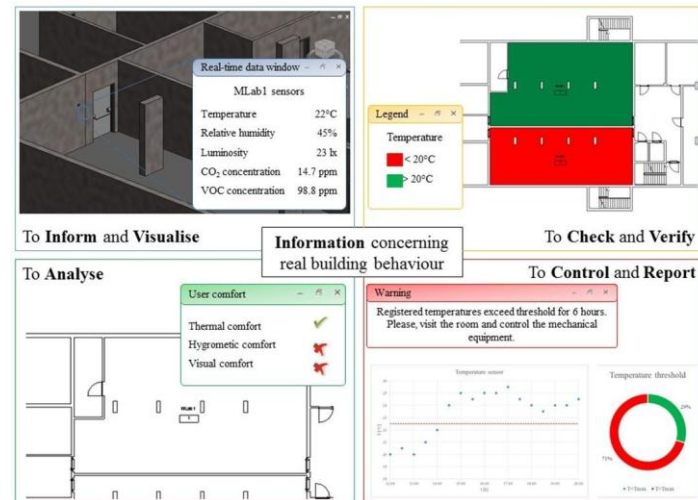
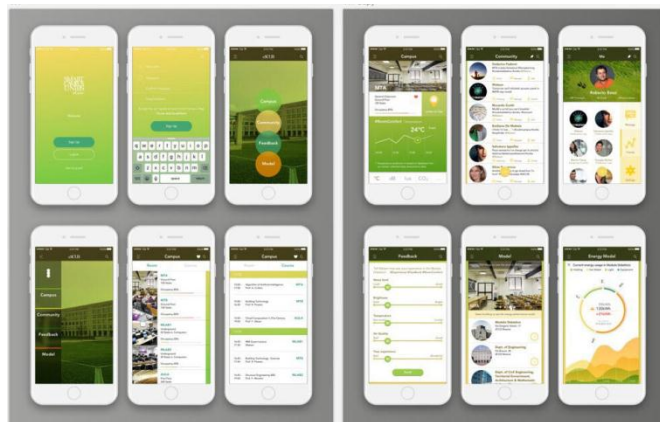
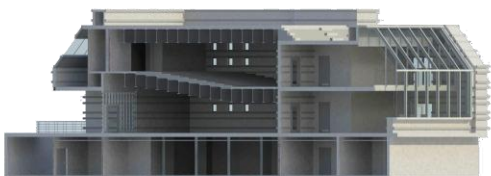
L'Occupancy è Fruizione (Dinamica) dei Servizi



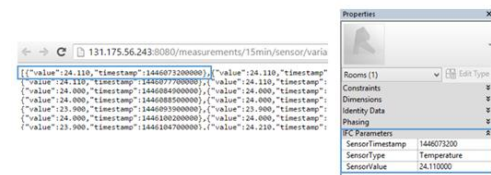
# edilportale® Il Progetto dei Servizi

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## Cespiti & Utenti in Dialogo in Modalità Individuale?

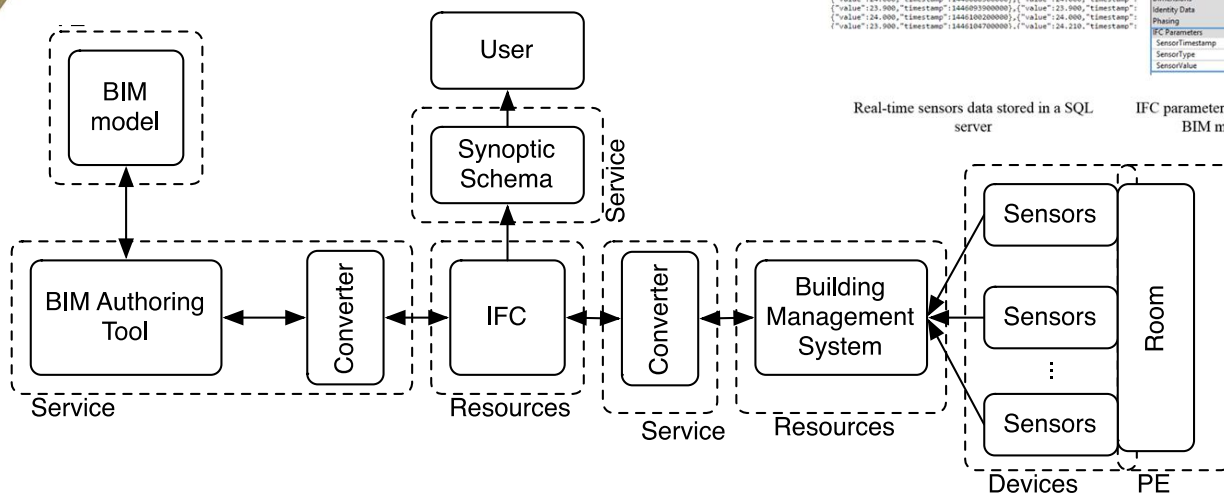


<http://es3.unibs.it/elux/>



Real-time sensors data stored in a SQL server

IFC parameters of rooms in BIM models



Fonte: UniBs