Do We Design Our Cities?

Eugenio Fontan

WSBE 2017

Hong Kong.
We are enzyme.

Architecture Office
Registered BIM Consultant by Graphisoft
**Enzyme:**

**def.**

1. A substance produced by a living organism which acts as a catalyst to bring about a specific biochemical reaction.

2. Proteins that speeds up the rate of a chemical reaction in a living organism. Without enzymes, life as we know it would not exist.
Our approach.

Through the building life process.
Our approach.

From the earliest stage of design up to construction..

..and the whole life cycle of a built project.
Do We Design Our Cities?

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Hong Kong.
How Do We Design Our Cities?

WSBE 2017
Hong Kong.
What is a City?
What is a City?

A city is a large and permanent human settlement

Wikipedia
Cities are composed by a combination of buildings infrastructures, historical heritage, landscape..

PROJECTS
Cities are composed by a combination of buildings infrastructures, historical heritage, landscape.

PROJECTS

+ 

USERS
How Do We Design Our Projects?
How Do We Design Our Projects? For Users?
1. Best **Design** (Project)

2. Effective Design **Process**
1. Best Design - Project
1. Best **Design** - Project

**We Set Up Goals:**
Sustainable Strategies.
Quality of the Project.
User and citizen experience.
Construction Techniques.
Integrated Design.
Constructibility.
Budget considerations.
...

2. Effective Design Process
2. Effective Design Process

How To Achieve Goals:
Integrate Disciplines
Good Coordination
Collaboration
Documentation Production
Deliverables
...

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2. Effective Design **Process**

**Use of Time and Resources**
2. Effective Design Process

Use of Time and Resources

Project = Reality
Current Design Process
Project 1

Architects (Designers)

C.D

S.D

D.D

T.D

Cons.D

On Site
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<th>Architects (Designer)</th>
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Project 1  ≠  Project 2  ≠  Project 3  ≠  Reality
Current Design Process

- 2D Drawings based Coordination.
- Unclear Collaboration in between Consultants
- Inaccurate Documentation
- Errors
- Abortive work, Schedule Delays & Overtime
- Over Costs
Current Design Process

- 2D Drawings based Coordination.
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Waste of Resources and Time
Isolated Disciplines
Combined Disciplines
Combined Disciplines

Clashes!
Combined Disciplines

Clashes!
Project 1 \not\equiv Project 2 \not\equiv Project 3 \not\equiv Reality
Project 1 = Project 2 = Project 3 = Reality
Solve The Problem

Current Design Process
Solve The Problem

Current Design Process

2. **Effective** Design Process
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**Contractor**
- Local Architect*
- Lead Consultant...
- (...)

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Project 1

Project 3

Improve Collaboration
Effective Coordination Through the Whole Process
How Do we Achieve this?
If All Consultants cannot be involved from the beginning?
BIM Work-flow
BIM Work-flow

= 

Efficient Platform of Collaboration
Efficient Platform

Concept Design 1:200

Errors?

Schematic Design 1:50

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Collaboration

- GRAPHISOFT ARCHICAD
- IFC
- Energy
- Architecture
- MEP
- Structural
- DDS-CAD
- AutoCAD
- Revit
- MagiCAD
- Autodesk Revit
- ETABS
- SAP 2000
- TEKLA Structures
- NEMETSCHEK Alpian
- NEMETSCHEK Scia

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Collaboration
BIM BAM BOOM
The real promise of “BIM-BAM-BOOM!” is “better design, better construction, better operation”.

HOK Chief Executive Officer Patrick MacLeamy
Effective Design Process
Effective Design **Process**

- **Efficient Collaboration** in between Consultants & Disciplines
Effective Design Process

- Efficient Collaboration in between Consultants & Disciplines
- Accurate Exchange of Information & Documentation
Effective Design Process

- Efficient Collaboration in between Consultants & Disciplines
- Accurate Exchange of Information & Documentation
- Avoid Errors and Clashes
Effective Design Process

- Efficient Collaboration in between Consultants & Disciplines
- Accurate Exchange of Information & Documentation
- Avoid Errors and Clashes
- Keep Schedules and Avoid Over Time
Effective Design Process

• Efficient Collaboration in between Consultants & Disciplines
• Accurate Exchange of Information & Documentation
• Avoid Errors and Clashes
• Keep Schedules and Avoid Over Time
• Avoid Over Costs
Effective Design Process

For What?
Effective Design Process

For What?

$?
Podium Gardens and roof treatments.

Stairs, access and street landscaping.

Sinuous curves and green edges on terraces at the shopping mall.

Patios and green areas of the main Plaza.

Organic landscape and treatment of the green roofs.
Conclusion..

A **Smart** use of Resources and Time
Conclusion..

A **Smart** use of Resources and Time

*From the Beginning*
Conclusion...

A **Smart** use of Resources and Time

*From the Beginning*

*Using BIM*
The Excess of Resources & Time we use to Solve Errors, bad communication and coordination in the current process..
Conclusion..

The Excess of Resources & Time we use to Solve Errors, bad communication and coordination in the current process..

Should be use for producing a Better and Sustainable Design!
Conclusion..

1. Best **Design** (Project)

2. Effective Design **Process**
Conclusion..

We want

1. Best Design (Project)

2. Effective Design Process
Conclusion..

We want 1. Best **Design** (Project)

We need 2. Effective Design **Process**
We would do better Projects and Design Better Cities!