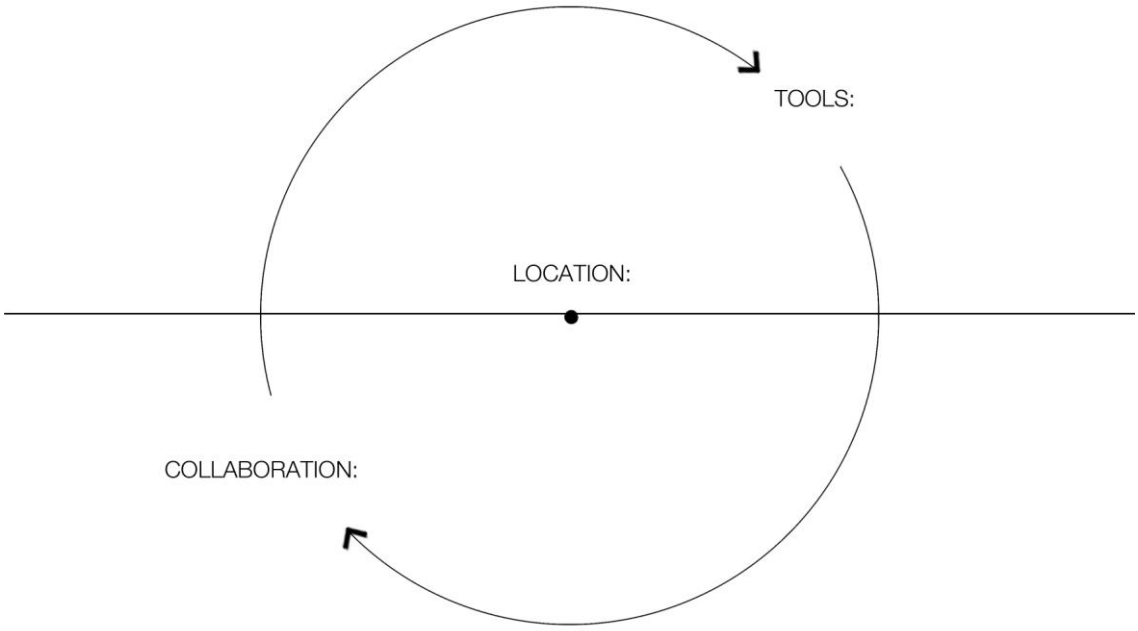
IAAC Participation to the Venice Biennale 2012 and the Spanish Pavilion: Spain Lab: Academic Lab

Theme: **Arch-adapting,** ***An evolution to the past***



Credits:

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Music & Sound Design of the video: ***Marios Aristopoulos***

Summary

Arch-adapting: An evolution to the past, is an essay on architectural phenomena of adaptation to new realities of architectural creation, from the moment of the conception of an idea until the final architectural outcome. Here, the word outcome substitutes the word construction, on a need to amplify our limit and overpass the hardware sense of constructive spaces/ objects.

¨The evolution to the past¨ concept works with two main poles: **The caveman** on one side representing the ultimate connection of the human with nature and his tools, a man that finds rather than gets, and **¨The digital caveman¨**, as we call him, on the other hand, is representing the high technological man that is able to use technology for re-approaching reality, through high analytical research.

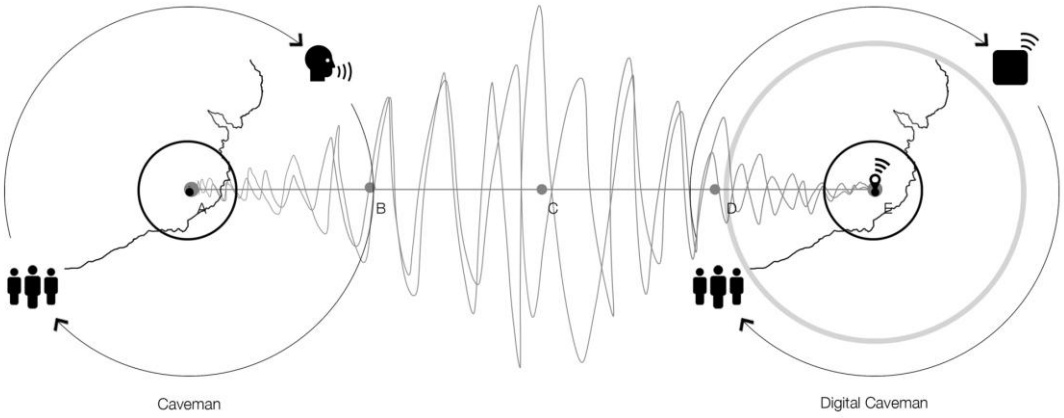


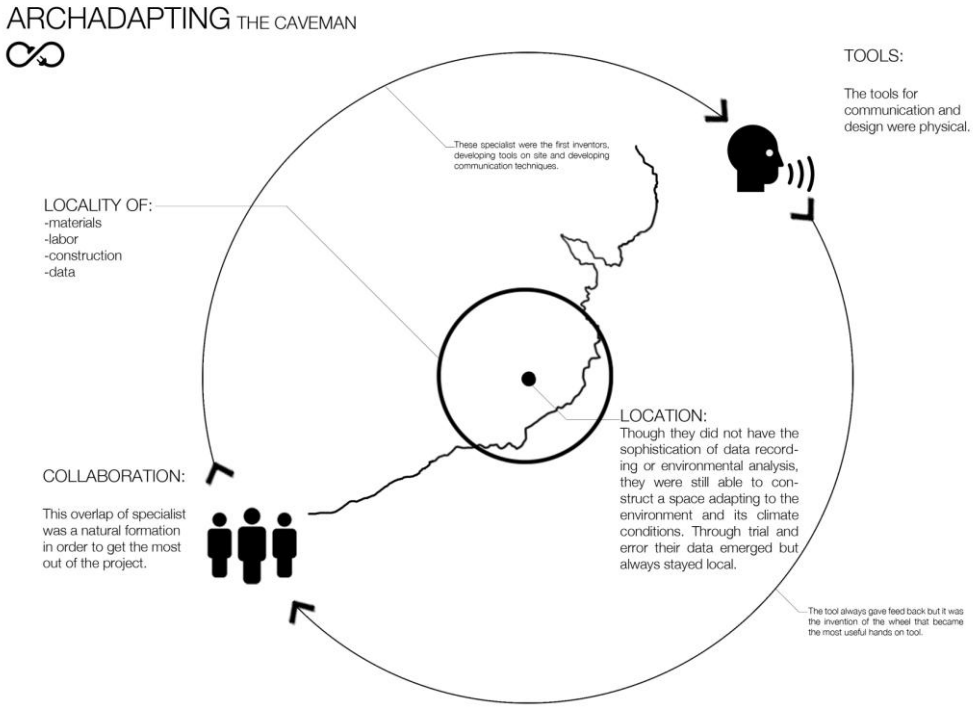
Diagram of the evolution to the caveman [A] to a digital caveman [E]

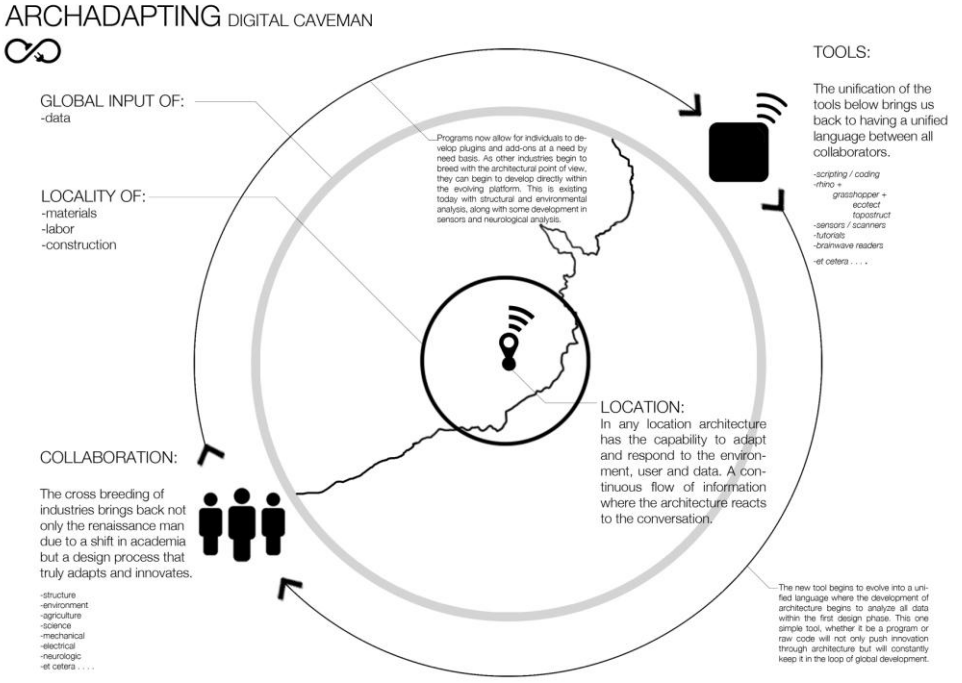
Innovation is to be sought after in the beginning of things, in the roots. Innovation is seeded with knowledge and awareness of one's past.

Nearing the term Arch-adapting, it is important to highlight that these two poles are based on the figure of the simple man, rather than the figure of the architect. What it is tried to be alleged, is that we have been stretched to a moment were architecture is giving out its ¨power¨ again to the user, making him the ¨architect¨ of his environment. And this is the moment were both ¨cavemen¨ share a common ground, they both have direct access to their tools. In a certain moment of the history, Architecture monopolized its tools; tools were exposed only to this certain elite. Now the man alters again to a caveman, a ¨digital caveman¨ that requires to implicate and adapt himself to the advanced means available. The architect here does not create a predetermined spacial situation, rather a platform that offers the tools and the knowledge required for one to come to be autonomous, self-sufficient and part of greater network of exchange. A platform where nature is deeply involved, where materiality originates an architecture adaptive to the environment, where real time data give flexibility and reduction of unnecessary wastes.

The above mentioned essay will be exploring the innovation in Architecture through a quick view on the evolution of architecture in history, by watching closer aspects like locality, tools, collaboration (between people, as well as between people and nature).

an evolution to the past





Contents

Pre – Chapter:

Acknowledgements

1. Architecture is for all, not only for Architects.

2. From Bernard Rudofsky till now, Architecture failed in reactivating the **sensual awareness**. Observation minimizes its power to logical observation, while **instinctive observation** is disappearing.

3. Architecture has **entered the territory of urban organization** - therefore is more than ever implicated to matters of social life while **paradoxically is lacking sufficient feedback from anthropology, social and nature sciences**.
"Architecture defined in an anthropologically wider framework reveals new aspects of the human condition.....With increasing urbanization of the world, rationalized architecture has become an important part of the modern human condition." Nord Egenter

4. A minimum amount of Architects know what Vernacular Architecture is, and never got feedback from it.

5. The fact that **History of Architecture**, in the academic environments, taught by professors from departments of humanities, shifted closer towards theory of Architecture, and was now taught by architects minimized the social awareness of the new generation of Architects, universalizing styles and methods.

6. High-tech does not necessarily mean **intelligent**- It is the **context** in which a system is used that **can define it**.

7. Sustainable architecture doesn't deal with **checklists of incorporated technological systems** (solar panels, biomass burning heating systems etc.) rather than with **intentions of integration with nature** through material, observation and deeper understanding of location and environmental conditions.

8. Sustainable thinking evolves to sustainable action that evolves to sustainable habit that could evolve to **energy flows of a sustainable city framework**.

9. Access to networks might be the biggest shift towards a social / political / economical change.

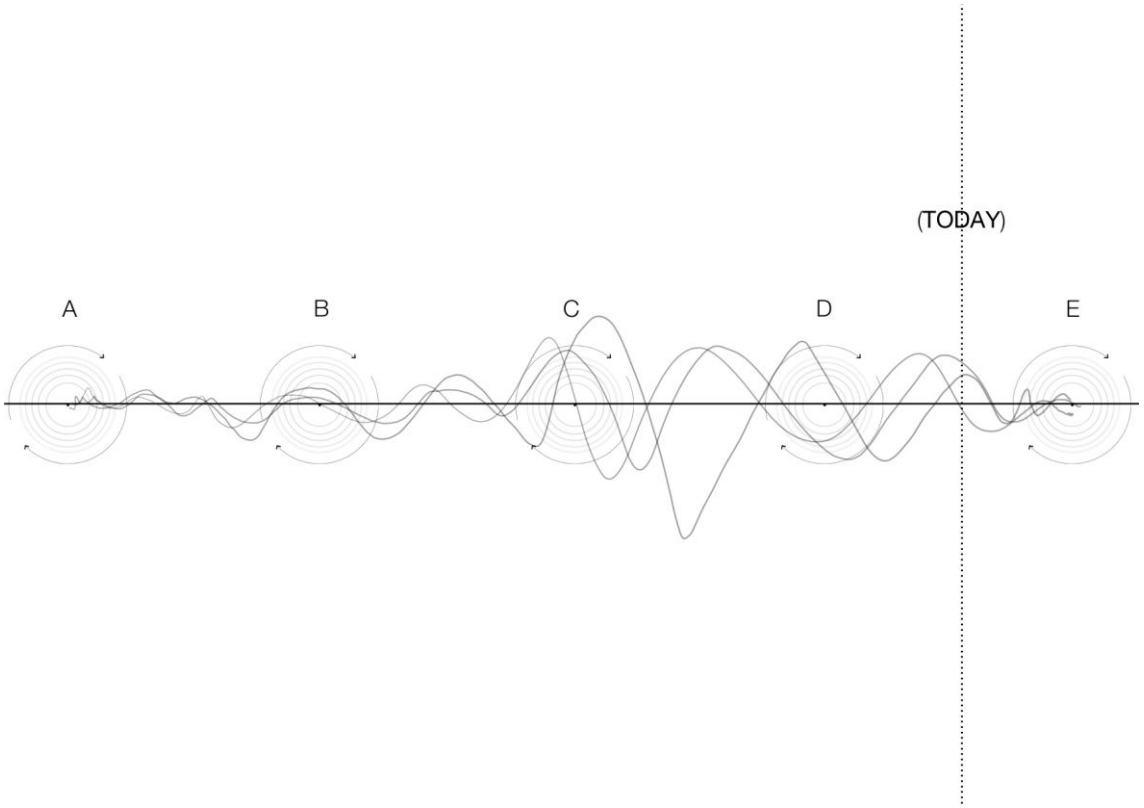
10. Main social context of earlier societies of humankind was **political and economic absence**. Main social context of our time deals with **politically ill societies with economic status ... to be announced**. Therefore one could boldly say that we might be facing similar social contexts!

11. The greater researches came from the **need** to reply to a **need**.

12. Absence or limitation of natural environments in modern cities, leaded to significant reduction of human instincts.

Chapter I

The timeline



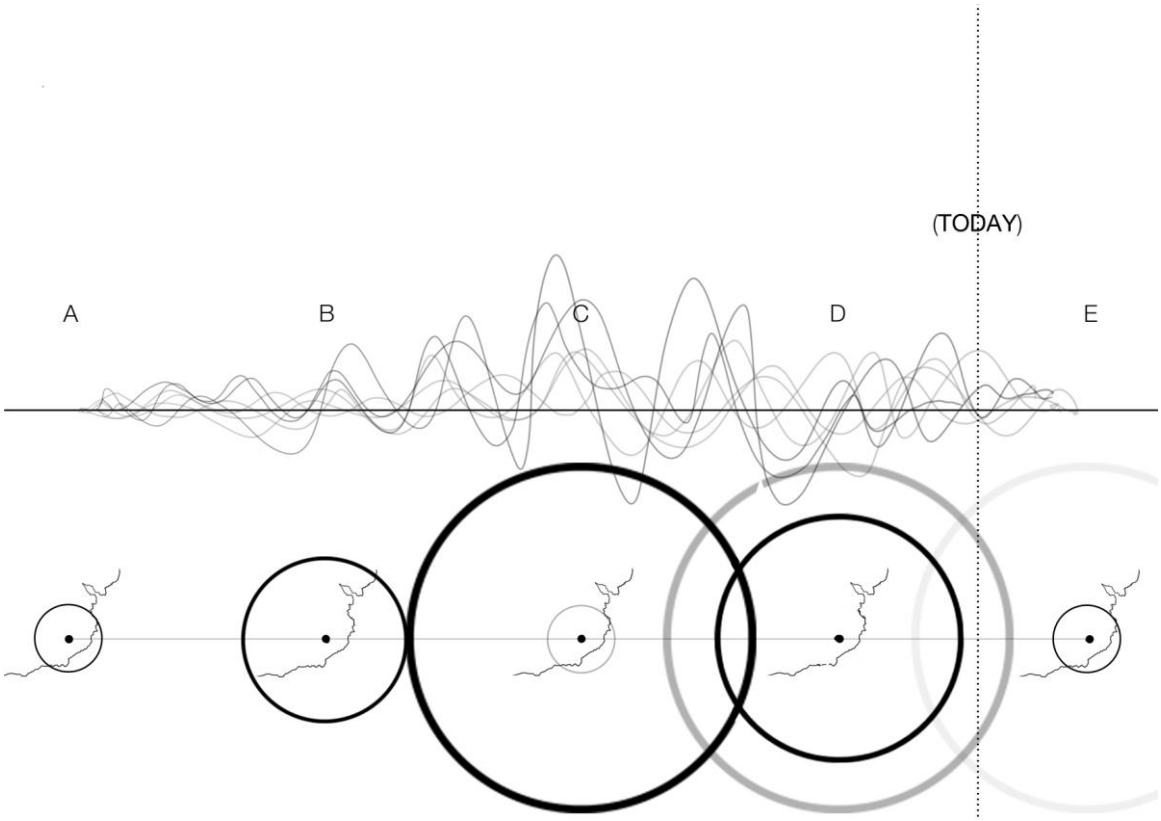
The timeline - (The frequency refers to the disconnect within the cycle)

Identifying innovation in architecture through its process we are able to examine the frequency between adaptation and disconnectivity. Essentially this is not only a search from common grounds, but an examination of the process that enhances innovation. These common grounds we are heading towards are not foreign. It is a return to the mindset of the caveman. The selection of caveman here is very distinct.

With environmental data emerging through technology, we have shifted mentalities towards a sustainable goal that mirrors the simplicity of the original architectural process. A visualization of the time line of this process depicts frequency were Architecture is evolving back to the beginning, back to its origins.

Chapter II

notes … on Location /Context



On Location there are several subjects that if analyzed towards a direction on global efficiency, would come to generic but common conclusions.

Taking it from the prehistoric period, powerful appeared to be the location that had a climate to support a fertile earth and therefore provide plethora of natural products that could support vegetation as well as animal population's growth. Such growth is resulting to prosperity for the habitants; nature offers them a rich diet. This natural growth assure, an above the average, health status of the habitants and as an extension to that, a cultural development is expected.

Locations that were in minor positions, dealing with heavy climate and distant locations were adapting their needs to the minimum means available. They were adjusting their diet to the vegetation and the animal species that their land could support.

When populations started growing, the need of larger quantities of food was more than a necessity. Fertile locations were obliged to start producing food (*here the appearance of agriculture is noted), while sterile lands were obliged to import food or to migrate towards fertile lands. Somewhere there, we can place the initiation of the need to produce and to travel. The above needs, placed location to another state of analysis. Habitats are claiming locations, since location is to define a continent's, a country's or a city's superiority and power. Powerful, becomes the location, that has, close to equal distances to all the other locations. Even more powerful if it appears to be positioned in between equal sized groups of locations, cause then it becomes the necessary link of one group of locations to another. A geostrategic position like that, would directly bring a location to advantageous position, relatively with the others, since form its center, a variety of lands could be approached with comparatively less effort.
In later extend, habitat of a land with the above characteristics, could control the movement of goods and therefore the well-being of populations of less fertile lands. With the pass of the years more and more power sums on top of the existing, since needs are multiplying and new are appearing.

Zooming in, and reducing the scale that we analyze above, similar logic of power distribution appears to modern countries and cities, pointing though to opposite directions. Here power is set by the cost, while values are given according to market demands. The further away located from the production, the most valuable properties become in terms of cost; therefore the one who has the possession of such property is recognized as powerful in his city context. In this model of social design of economic competition, the diversities between the interests of the group and the individuals are multiplied. Robert Frank supports the argument that the race of status of the individual affects the group, while the individual by buying status, does not necessarily increase his well-being.

Here our interest is to focus on the effect of the market impositions as far as it concerns the growth off societies and their urban formations in a top down design, leading to an advancing chart of disconnection from nature, jeopardizing the health of the habitants, while providing them expensive treatments. Even if the land is sterilized, paradoxically is overloaded with markets offering all possible products produced in all possible locations. The need for importing goods, materials, products leaded to rapid advances in transportation so us to assist the emergence of importing. Architecture then became less creative and more collective in terms of material use. This new tendency was quickly and massively externalized to an over-blow of construction. Locality of materials was not an issue anymore; Countries were reaching across the globe to get materials and fabricated parts. With the shift into the computer era, even larger quantities of imports and exports were manageable and easily controlled. Data was no longer physical, yet materials and fabrication were becoming more delocalized. Somewhere here a small environmental voice was emerging. A voice that was beginning to gain influence not only in the architecture field, but it appeared as a global push towards environmental consideration.

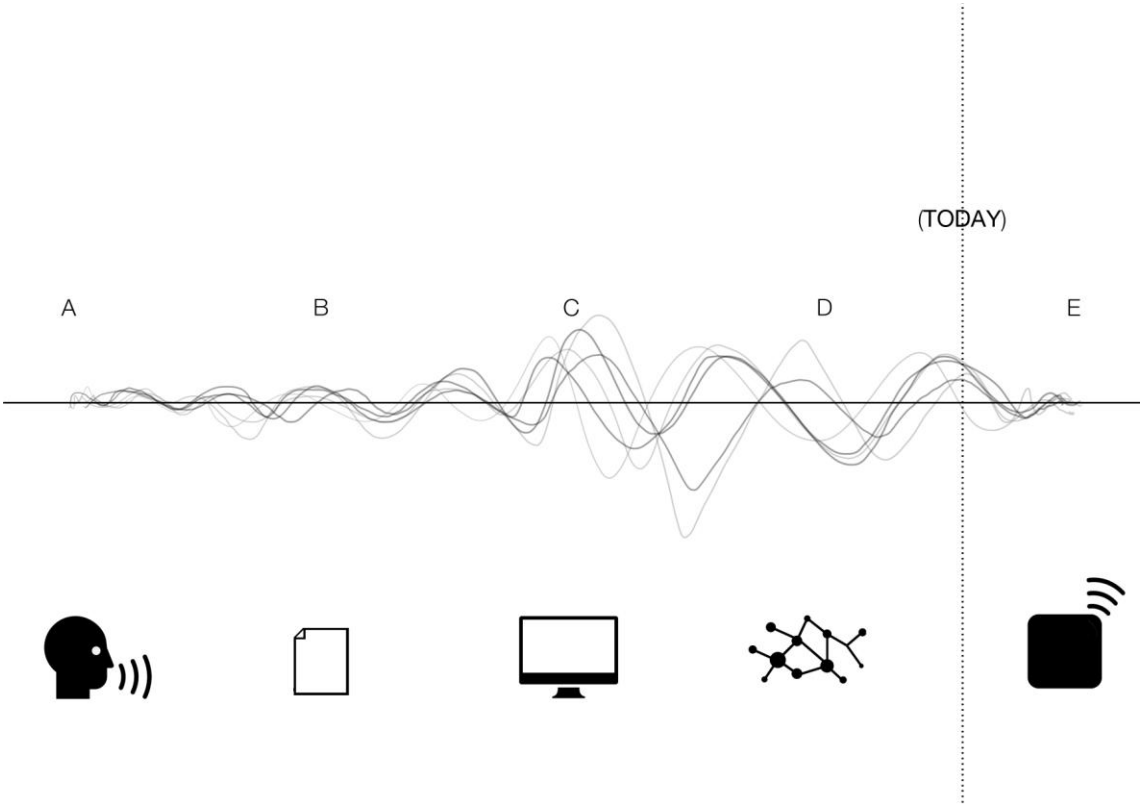
Witnessing this as the current reality, the evolution could head into a period (E), a period where the digital caveman appears. This period, with habitat the Digital Caveman, is potentially the one where

data are global and easily accessible, while material and fabrication are a local standard, minimizing to maximum the environmental effects.

Optimistically Architecture would increase its ability to adapt and respond to the environments that it belongs, in vital collaborations, where the main objective will be the farewell of the inhabitants. Hopefully remaining local, and as much dialectic as possible with the user, mainly through data circulation. We picture this as the society of the Digital Caveman, a society with a continuous flow of information, where Architecture is part of the conversation. Since the Prehistoric era, the human/caveman started observing his environment and cohesively "designed" through it. Building on earth, finding ways to collect water naturally and ways to protect himself from the environment,
while using natural materials, fabricating and constructing locally.

Chapter IV

notes … On Tools



During the life of caveman tools were very simple, yet contained a great amount of sub-context. Defining tools through communication, design, and education we can see that the caveman was quite proactive. He either communicated with his fellow cavemen verbally or physically. They were communicating through grunts and sounds that had specific meanings attached to them and designed through needs and not wants, where design was the building process as well. Education was hands on and required a high usage of memory to retain this information. What reinforces the collaborations between fields is a creation of a common ground for communication.

The caveman was the first inventor; he was creating tools on site while developing communication techniques. New tools were created through the trial and error process. Unifications of tools allow unified language between all collaborators, arriving either from different fields, either from different departments of the same field. In architecture, structural and environmental analysis tools are being incorporated to the initial design state. Industries are adapting to each other, developing tools of communication, or communicating through tools that share a common language.

Going back to the caveman, the creation of a tool was a reply to a need. Caveman started understanding that there are possibilities further over what is already offered by nature, what exists. He started flirting with the idea of creation firstly though modification. Well known example is the sharp rock tools that he was creating by modifying the shape of a rock though pressure flacking. Later, on the same chapter we will see the everyday digital caveman creating tools mainly through modifications of existing tools rather than invention of new ones.

Tools are evolving to be faster, more and more accurate, ready to process great deal of complexities, update calculations and so on. Their offer in terms of speed, maximized the time that the author could occupy towards intellectual thought.

The question is not what the software or hardware could do, rather than, how the software could be modified, adapted if you wish, in order to successfully bring to life an idea.

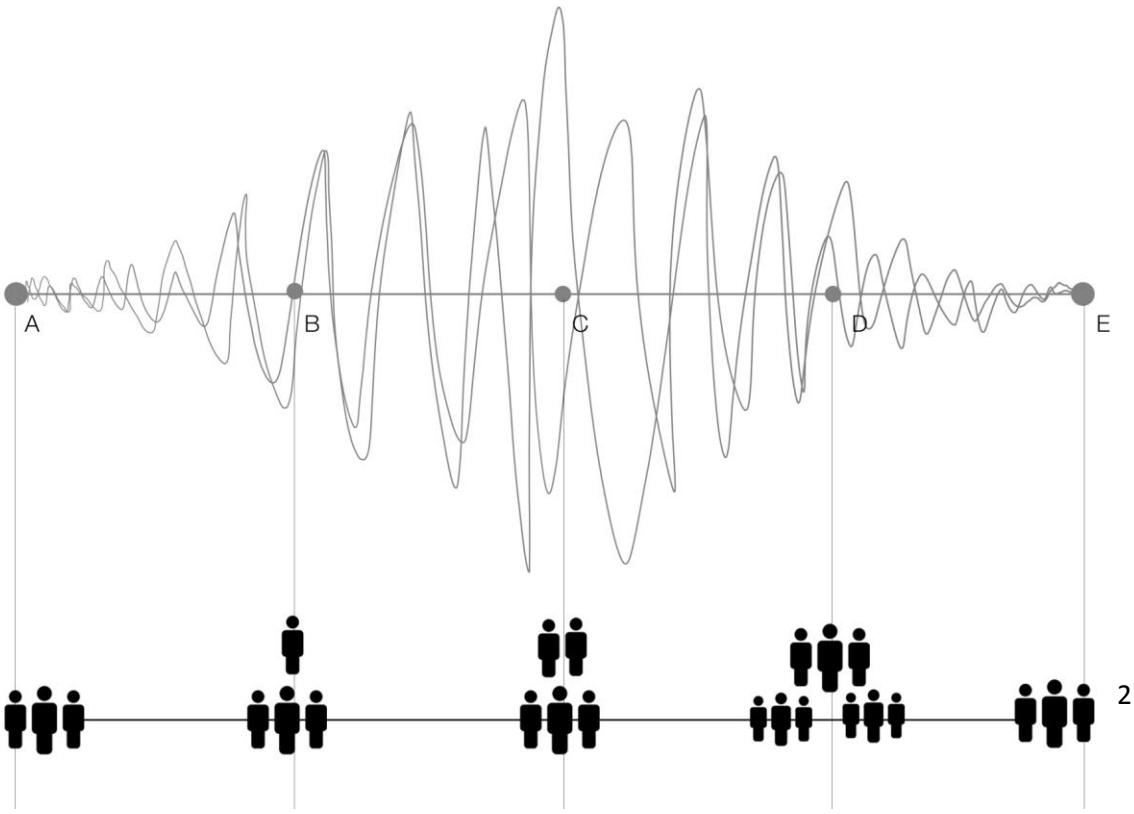
With the exposure on environmental data, came a need to incorporate direct solutions into the architectural system. 3D environmental analysis software tools, with location specifics, now exist due to need, making it possible, to include environmental analysis directly within the phase one of a design project. Wasn´t this the process of making tools for the caveman? "I need this final product so I will create the tool needed to do so." Now we have the appearance of "design-hackers" who, day by day, are building new ways to share technology and intelligent methods of designing through open source. The everyday enthusiast has the capabilities to become part of an open source network and participate in these modifications.

Today we are a bit disconnected but are striving for a unified language through tools. We can now communicate globally, constantly update our digital tools through updates and add ones while self-educating one's self through the growth. Different industries are now implementing their logistics within our design programs, and through online platforms we are able to communicated and solve problems on how to fully integrate a dew design consideration.

The main, and most important innovation that technological advances on software and hardware should claim is the accessibility to the user.It might be important to close this chapter by highlighting that tools (primitive or high technological) do not have imbedded any intelligence; either they are by their ¨pure nature of existence ¨ solution to any problem. The main generator of solutions is still imbedded in the inside the "author" – human

Chapter II

notes … On Collaboration & Social Learning



Architecture is a profession that stands in between other professions and appears in the heart of the social formation and function.

"Social learning is not new. Informal learning is not new. It's not what we call it that matters. It's what we do with it, or more importantly, what our learner's do with it. What should matter is how we connect learners with a need – to learning assets that will meet the need. We've evolved a bit beyond cavemen sitting around campfires swapping stories and best practices on how to "kill the beast" and feed the family, but does the social learning of today differ that much?" Gary Wise "Did Caveman Use Social Learning?"

Disconnection from nature resulted to significant reduction of instincts. The human of the modern city observes logically though pre-existing knowledge delivered to him, rather than obtained or discovered by him. It is quite fascinating, tracking down the simple, but efficient methods of learning of the "caveman". Knowledge was obtained mainly through observation and exploration. Instincts are trusted as the transmitters of the true information. Things were analyzed according to comparative thinking among current and previous knowledge obtained by the same person. Unschooled, the caveman, and history free, was able to self-acquire knowledge on multiple levels that would help him protect and entertain himself. The most interesting might appear the trace of his interest in evolving communication skills though cultural expressions. Wall paintings of prehistoric era depict the accuracy and their careful observation and attention in details. Curiosity paradoxically made them patient, patient to explore all details. The learning process of the caveman was not aroused upon reward - as animals do by anchoring their attention restrictively upon "promised" award or for avoiding punishment.

Through the careful observation process, we are able to extract data from our environment and gain important and useful information for the present and the future.

On our moments, culture has evolved with a great amount of history to be discovered and explored by learners of today. One interesting scope to explore the learning process of current times, would be by firstly understanding the amount of knowledge that exists, as a sum of all past generations contribution and then connect this information with the fact that all acquired knowledge from previous generations in the total are considered as a base upon which we are to developed our discoveries, and sum it to the existing, as our contribution to the system. One might say that we start our education history full, in our majority, learning the discoveries of our ancestors more than pursuing the discoveries on our own in a fear of positioning ourselves in front of high probabilities of repetitions. To avoid repetitions we follow standardized processes of learning. Standardized processes of learning lead closer and closer to specializations. The deeper into specialization we fall the more flexible we appear in the small scales (for example thus of a working environment) and the more cumbersome in a larger scale – (for example thus of our social environment).

It wouldn´t be out of the context to start from the field of architecture towards an ambitious change in the learning system. Why?
For two main reasons: Firstly because architecture is not a science and therefore its volume of specialization is importantly lower, compared with fields of sciences where specification reaches pick points. Secondly, because Architecture, by its "nature", if we may be allowed to say, is a profession that is obligated to deal with other fields of interests in its effort to reply to specified needs of certain functions. For different cultural and social functions Architecture is asked to cover a variety of needs. To do so, minimum research is expected by the architect.

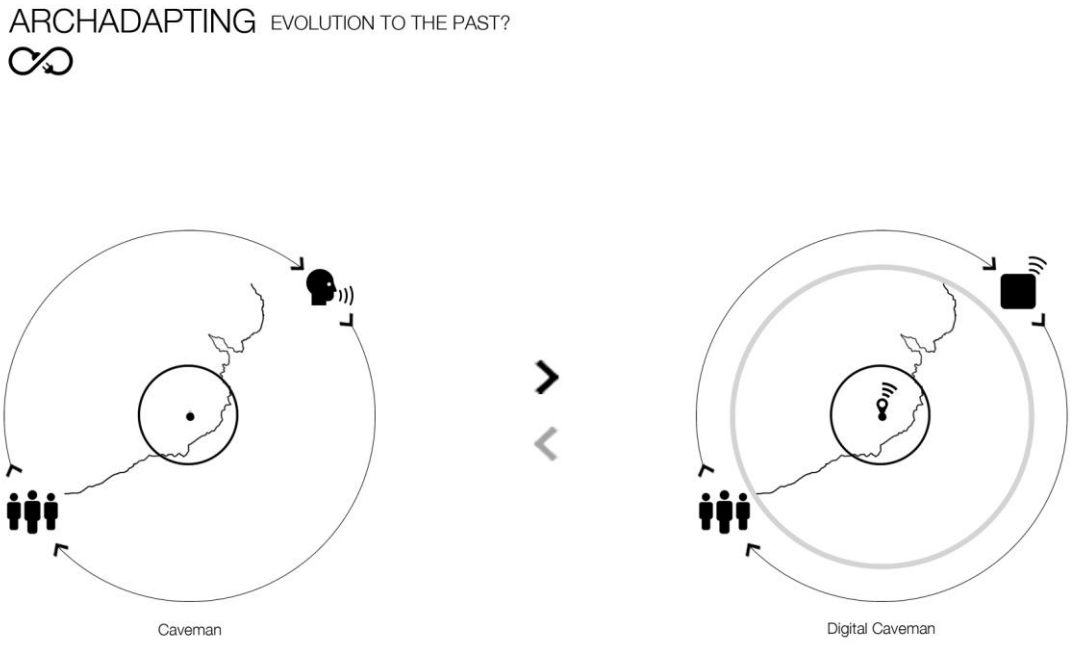
Architecture, expanding towards urban planning by designing large scale projects, seems inadequate in meeting the challenge. It mainly evolved in creating structures that reflect more the architect's identity, rather than creating an identity for the designed space. Contemporary urban environments, do not

provoke instincts, rather that passive obedience to urban boarders and predesigned flows. The transit spaces are empty of events, they appear as a pause moment, and life (in forms of communication and social exchange)exists only in predetermined and specially designed for that spaces. The expectation of surprise here is minimizing. Results like the above could be blamed on the disconnection of Architecture from social, biological and natural sciences.

Possibly we could collaborate better within multiple levels of collaboration if we externalize knowledge, reactivate instinctive readings and evolve to educate ourselves to become experts in the links. Digital caveman is given the possibility to reactivate instinctive decoding of information.

Chapter V

The Cavemen Dialogue



Dialogue theme 1 (Usage of Materials):

Caveman[A]says: This is what I can use from my environment
(representation of nature and natural materials through the tree)

Digital Caveman[E]says: This is what I can Re-USE from my environment *(Representations of his ¨Natural¨ environment=Build environment/selected Nature through a building)*

Dialogue theme 2 (Creations and control of Tools):

Caveman[A]says: I see, I make.
Digital Caveman[E]says: *size(200,200);
background(204);
Smooth);

int x=width/2;
int y = height/2;
float outerRad=min(width,height)*0,4;
float innerRad=outerRad*0.6;
float px= 0, py=0, angle=0;
float pts=36;
float rot=360.0/pts;
)
endShape);

Dialogue Theme 3 (Sustainability/Environment):

Caveman[A]says: I am able to create links with my environment and evolve social patterns in a not predetermined way…leaving space for things to occur.

Digital Caveman[E]says: I create another layer in my constructed environment. A platform where the connection can be infinitely ready to accept social evolution in unexpected patterns.

Dialogue Theme 4 (Learning processes):

Caveman[A]says: I am history free. My reference is my nature, linked with the nature of my environment. Observation through instincts is my teacher.

Digital Caveman[E]says: I am history full. I observe through logic and given knowledge. I am evolving in becoming instinctively an expert to the links and externalize knowledge.

Chapter VI

notes … On Adaptation

We claim :

. Innovation as a natural consequence of simple alterations of our mindset.

. Innovation = Adaptation

. Innovation here seen as the link between Technology and Biology

Innovation > mainly linked with **Technology - -** Lat. innovare: "to change" \innovatus: in—"into" +novus—"new".Meaning "development of new customer value through solutions that meet new needs" wikipedia >> Adjustments to meet new needs.

Evolution > mainly linked with **Biology - -** Lat. evolvere: Evolve -"to unroll," Meaning "to develop by natural processes to a higher state" wikipedia >> Adjustments to meet higher state**.**

Adaptation = Adjustment

In Biology > " process whereby an organism becomes better able to live in its habitat or Adaptation is the evolutionary habitats" *wikipedia*

In Technology > we find the " The technology adoption " lifecycle model, that describes the adoption or acceptance of a new product or innovation, according to the demographic and psychological characteristics of defined adopter groups." *Wikipedia*

Epilogue

Why caveman?

12 manifestations for choosing caveman as the protagonist of a story that tries to talk about innovation in Architecture.

1. Caveman was the greater inventor of all times - he invented ¨Energy* (*fire)

2. He was the constructor of all his needs

3. His main job was to survive -Therefore all jobs were his job

4. He lived before the invention of money.

5. Architecture schools have 0 classes on biology and Earth but we still keep on building on IT. Caveman new everything on how the earth and the living organism on it acts.

6. They learned without being taught. We are being taught but we do not necessarily learn.

7. He searched for the answers - We ask for the answers

8. Architecture process and result lack of rhythm – All natural process could be understood intuitively by rhythm. We need to help the habitat intuitively understand the rhythm of our spacial creations.

9. Cavemen societies were evolving in unstable patterns thus as of nature´s where a certain growth of form appears in a flexibility to adjust according to needs. Our societies are evolving in static patterns with restriction for growth generating pathogenesis in multiple levels of social function.

10. Caveman was the first human habitat of the Earth.

11. What separated us from the caveman was a change of the question .. the question how became why!. Now we need both equally.

12. And mainly .. because he was not an Architect but he was building. Our society has Architects who don't build.

Bonus Chapter

King Kong image from the motion film by Merian C. Cooper and Ernest B. Schoedsack was selected as suitable to accompany the final questions of this video, for the below main reasons:

- Manhattan, in its collective image, was the same from the black and while film of the 1933 till now. **> Old technology and New technology appear in the same environment.**

- King Kong character is "A prehistoric type of ape" ."Like most simians, Kong possess semi-human intelligence and great physical strength." **Wikipedia > A futurized, repeated, flipped connection with the theory that brings the origin of humans to apes.**

- Within all its exaggeration > A famous movie icon, an anti-hero inside an inflexible system and a rigid urban environment, with static connections, unable to adapt on the appearance of an unexpected member.

General Notes:

- Architecture without Architects, by Bernard Rudofsky
- Encyclopedia of Vernacular Architecture, by Paul Oliver
- Architectural Anthropology, by Nold Egenter
- The Self-Made Tapestry: Pattern Formation in Nature,by Philip Ball
- The Ten Books on Architecture (Bks. I-X), by Vitruvius
- A thousand years of non-linear history,by Manuel de Landa
- A phenomenology of landscape: places, paths, and monuments,by Christopher Y. Tilley
- Tracking the Neolithic House in Europe, Sedentism, Architecture and Practice Series: One World Archaeology, Vol. Hofmann, Daniela; Smyth, Jessica
- A Social Archaeology of Households in Neolithic Greece: An Anthropological Approach,by Stella G. Souvatzi
-The appropriation of Nature: essays on humam ecology and social relations (Manchester : Manchester University Press, 1986), by Timothy Ingold
-Common Knowledge – A Concersation with Michael Hardt by Tor Inge Hjemdal & Anders Durmann Melson
-Toward a Scientific Architecture, by Yona Friedman, translation Cynthia Lang
-The Darwin Economy: Liberty, Competition, and the Common Good, Robert H. Frank

Credits:

Institute for advanced architecture of Catalonia

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