

process architecture

[The necessary match between visible and hidden architecture]

Statement of teaching and research

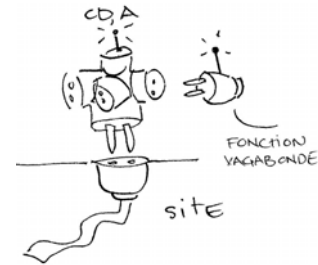


Fig 1: A group of three of my students of the studio considered this sketch “the concept of the project”, a series of architectural modules that are “plugged” to a basic infrastructure. At the basis of a creative process, the concept and its representation (the sketch) were developed simultaneously. The result: a flexible building that provides services to Montreal’s homeless population.

The process of architectural design follows a sequence - often cyclic - of decision making. During this process, just drafting a line on a paper implies and launches a chain of decisions that need to conciliate economic, social, environmental, technological and logistic considerations. The line might ultimately become a column, a beam or a joint, all **visible** elements of architecture. However, the visible elements of architecture do not exist unless a series of organizational and logistic processes are completed. The architect participates in the definition of materials, agreements with clients, assessment of user needs, definition of suppliers, clarification of engineers’ demands, etc. These processes hide behind the final product, the building. They become **invisible processes** of construction. The result of the product is largely affected by invisible processes that occur before, during and after the design.

How do the visible and invisible components of architecture interact in the process of design? How do they interact in transforming a back-on- the-envelope sketch (drafted in the first meeting between the architect and the client) into a completely finished and ready-to-use building? How do they keep interacting with the building forever? Various examples allow to understand the importance of invisible processes before, during and after the design of a building:

1. Need of information: The success of both the process and its final result largely depends of the amount and quality of the information that is both used and created. However, gathering and creating this information from various sources (the client, the context, the manufacturers) is inheritably constrained by short timelines. In part because, once the building is commanded, it requires an immense investment that rarely produces any revenue before its delivery. In other words, despite of the time that the clients might take to make a decision and launch the project, they pay and anxiously await completion. In fact, history of construction demonstrates that reducing design and execution times does not eliminate clients’ anxiety. Clients will be inevitably interested in reducing the “stale” periods of investment.

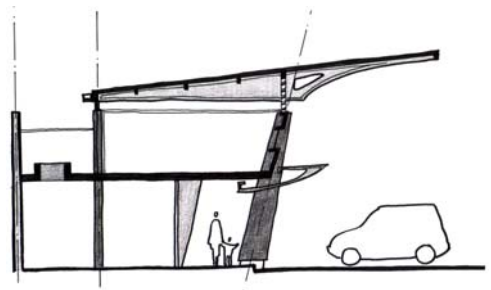


Fig 2, 3: Technical innovation in the construction industry is associated to uncertainty and therefore to increased risks. To develop this commercial project in a gas station we convinced the client of various innovations after demonstrating him the efficiency of our information and risk management plan. This would have not been possible without a proper understanding of both visible and hidden architecture.

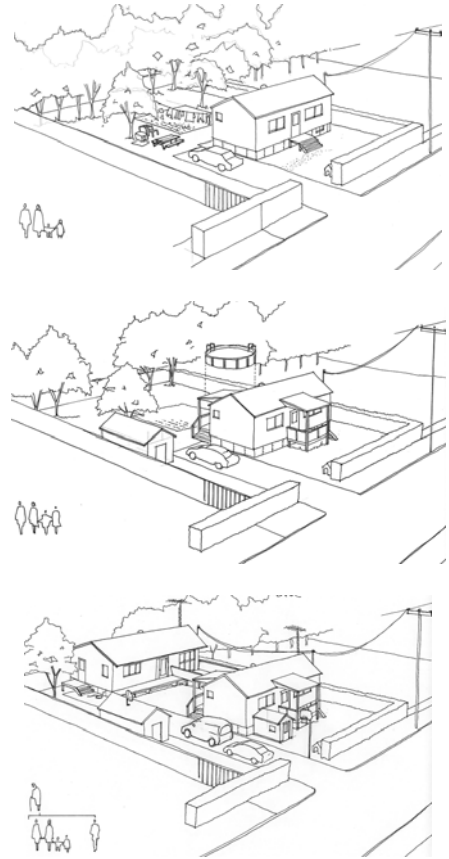


Fig 4, 5 and 6: These three images constitute the analysis of housing typologies in the Kahnawake community. Rather than static, the building is a dynamic process that follows the influence of invisible elements of architecture that include the changes in household form.



Fig. 7 and 8: Before and after: five years after its completion, the building kept changing, suggesting that the invisible processes of architecture do not really finish.

2. Creative dynamics: Most of the characteristics of the final product are formalized in a creative dynamic process of conceptualization in which the representation of the idea (for example a sketch) and the idea itself are originated simultaneously. In this creative process, the concept and its representation are hardly dissociable, often creating a repetitive cycle of trial-and-error that occupies a large portion of the already compressed timeline for preparation of contractual documents (see Fig. 1, 2 and 3).

3. Availability of resources: If the client does not have enough resources to purchase a completely finished building that corresponds to his/her expectations, he/she will extend the process of completing an unfinished and substandard unit over a longer period of time. This notion applies to the progressive development of a slum shack in developing countries as much as to a single detached home in Canada in which the buyer is expected to “finish the basement” over a period of time - and often through self-help (see Fig. 4, 5, 6, 7 and 8).

4. Customization: Contrary to the command of products from many other industries, an architectural design ultimately leads, with some particular exceptions, to the development of a *unique* product. Architects design prototypes as every building is different, or almost. Even though it is likely the most expensive product a client will ever purchase (i.e. procure), a building requires that the client commits to pay upfront for a prototype he/she does not know and often cannot even understand or fully “visualize”.

Design studios constitute an ideal space for synthesizing the relationships between visible and invisible components of architecture. My previous research and experience in process architecture demonstrates that this approach contributes to a responsible understanding of the consequences of the decision making process of architectural design.



Fig. 9. Construction of an emergency shelter. In this exercise the students had to consider aspects of design, logistics and management (visible and invisible aspects) in order to build, in 3 days and with minimum tools, an affordable and environmentally-friendly solution for cold climates.

This approach is crucial for a comprehensible exploration of the responsibility of the architectural practice towards the most unprivileged members of the society. My research and professional interest includes the exploration of the role of architecture in the search for solutions to contemporary challenges faced by socially excluded groups and minorities, the elderly, the impaired, chronically ill, people affected by natural disasters or wars, etc. This approach requires thinking about both design and organizational solutions for groups that do not fully benefit from architect-made buildings, such as the extreme poor, the homeless or the refugees (see Fig. 7, 8 and 9).

This challenge requires a multidisciplinary approach to architecture capable of integrating (i) various aspects of the discipline (design and theory, construction technologies, history), and (ii) the discipline of architecture with other fields such as urban studies, sociology, project management (see Fig. 10 and 11). This work also requires an understanding of the architectural practice in the international context and in the uneven environment of developing countries and emergent economies.

Process architecture is crucial to prepare the future generations of architects to the challenges of contemporary societies. Particularly to the new challenges catalyzed by the globalization of construction markets, accelerated urbanization of highly populated poor countries, aging of the population in industrialized countries, changes in the Canadian household types, and the increasing gap between the rich and the poor in both developed and underdeveloped societies.



Fig. 10 and 11: Housing – as a process – is considerably affected by social and urban processes. This photomontage suggests that a better understanding of these processes could have improved the quality of the final product.