

## Architecture – a process not a product

(notes from a presentation by Max Herriot of HMA to the New Zealand Chapter of the Worldwide Institute of Software Architecture on 30 May 2001)

It is interesting to note that the New Zealand Institute of Architects (<http://www.nzia.co.nz>) has on its crest the “seven lamps” of architecture which are based on the ideals of John Ruskin, the nineteenth century English art and social critic.

The question is how do you interpret these ideals in this day and age?

“Seven lamps”	More contemporary readings could be	May relate to different phases of process
<ul style="list-style-type: none"><li>• Sacrifice</li><li>• Truth</li><li>• Power</li><li>• Beauty</li><li>• Life</li><li>• Memory</li><li>• Obedience</li></ul>	<ul style="list-style-type: none"><li>• Environment</li><li>• Context</li><li>• Homeity of materials</li><li>• Integrity</li></ul>	<ul style="list-style-type: none"><li>• Design</li><li>• Construction</li><li>• Management</li></ul>

“The best architects always design a thing by considering it in its larger context – a chair in a room, a room in a house, a house in an environment, an environment in a city plan” – Eliel Saarinen.

In the end the key principles can be similar for every project and are bound up in the relationships of the people involved and the process – **and in many cases these principles are continually compromised.**

The process of architecture is often misconstrued by public. Architects are often perceived as people who create pretty pictures in isolation that are then built. In the old days of the “seven lamps”, builders would often build from these rendered elevations. My initial impressions of architects and engineers were similar.

One of the hardest things to get clients to understand is that architecture is about process and not necessarily solely about creating a commodity or product.

Of course, it is not an individual pursuit but one that involves a close working relationship principally between the client, architect and builder. The relationship between all three should be balanced – but often it is not.

Ideally the relationship between the client and architect and the client and builder should be weighted equally.

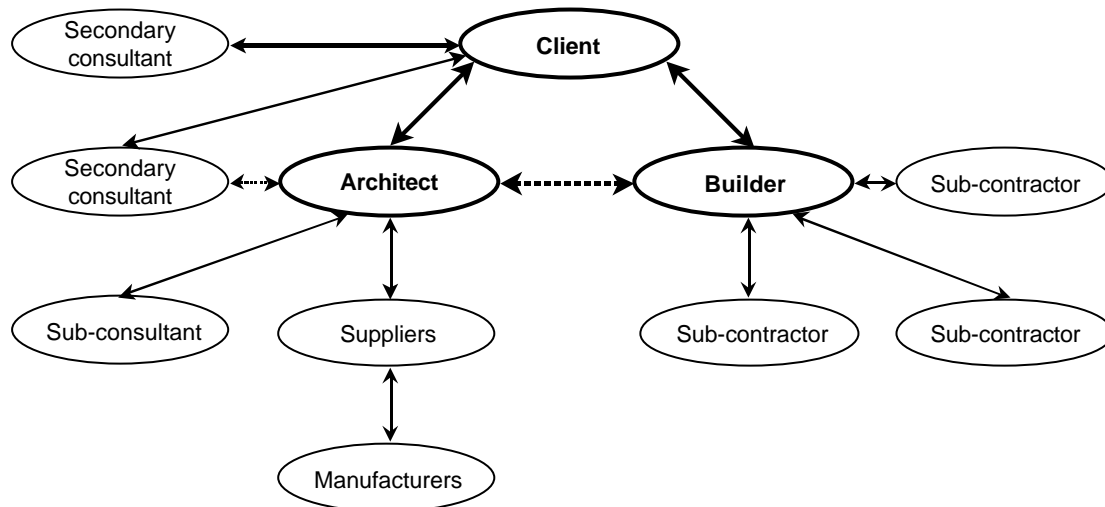
The architect will look for builders who can do the job and then the client chooses – they act very much in a co-ordinating role.

Architects, in turn, need to have an implicit understanding of the materials they specify and how the builder will put them together.

An architect must also be able to understand the capabilities of the builder. A major embarrassment for any architect is to come up with a design that can't be build. Part of architectural training therefore involves a practical knowledge of engineering.

The strength of this relationship between architect and builder is particularly important during construction.

There are also a whole host of other relationships – both working and contractual – for a project approached in a traditional manner:



Good and bad relationships at any level will affect the end result. Also, as with any other profession, there are good architects and bad architects.

Good architecture needs a good site, good clients, good contractors and good remuneration – cheapest isn't necessarily the best.

Engineering is a part of this process but obviously some jobs may be totally engineering-based, where the architect could possibly be a sub-consultant to the engineers.

Traditionally engineering could be seen as an extremely pragmatic occupation, but in some respects it can also be the driving force behind an architectural design. An example of this is the work of the great Swiss engineer Robert Malliart who used reinforced concrete to construct over forty bridges in the Swiss Alps which are acclaimed for their beauty and invention.

Let's now look at the various stages in the process and how they may relate to software architecture:

### 1. Pre-Design

This stage is primarily concerned with refining “the brief” to clearly understand what the client wants to achieve and what their objectives are. It also involves correctly setting expectations.

- Budget always underestimated (can often be as much as three times out)
- Expectations – ensuring the client understands the process
- Type of service, fees etc.

It is important to address the issue of budget as early as possible – as this often key as to whether or not a project proceeds.

## 2. Preliminary Design

An important aspect of this stage is to identify and take into account any restrictions or limitations that may apply. Very rarely are there no restrictions or limitations.

These may include district plan, building code and covenant requirements with associated issues of proximity, coverage, height, density, impermeable surface, character intensity and scale.

“Visualisation” of the design is also important. Some people can’t visualise 2D plans and diagrams – so a 3D model can help.

An important objective of this phase is to get “buy-in” from the client.

## 3. Developed Design

The developed design may involve input from a range of engineers (eg. structural, fire, electrical, plumbing and HVAC). The architect is responsible for co-ordinating these consultants to deliver an achievable design.

A quantity surveyor (or qualified estimator) will then be asked to provide an independent cost estimate for project. This will determine the feasibility of the project and enable the client to “massage” the extent of the work to suit their budget.

The scope of work will then be confirmed and it becomes the architect’s responsibility to try and design to that budget. Once this work has been completed, the necessary resource consent can be obtained (if required). At this stage about 20% of the total project costs have been spent.

## 4. Contract Documentation

This stage involves the preparation of all the drawings and specifications required for a building consent and the tendering of the contract for construction. The architect also co-ordinates the other consultants and checks their documentation.

## 5. Tender and Negotiation

At least three or four builders will be approached to price the work. The architect will then clarify and analyse the tenders before helping the client with the selection of the builder. Once this has been done, they may also assist with the negotiation and confirmation of the contract between the client and the selected builder.

## 6. Construction and Contract Administration

During this stage, the architect monitors construction and checks against the specifications to ensure compliance. This may include regular site visits, attending site meetings, site visits for practical completion inspections and co-ordinating other consultants.

The contractor is responsible for managing the construction.