Design concept and development
Design theory. The main function of semiotics is to communicate. This makes it particularly difficult to integrate into architecture, "because most architectural objects do not communicate, but function." Umberto Eco, 1968 [Gottdiener, 1986:57]

This is only partially true as a courthouse, for example, does communicate on a symbolic level, symbolising justice, fairness, etc. The process by which we as the readers make these connotations is quite complex. Eco explains this process by using a hypothetical example of prehistoric man and the cave.

The stone age man seeks shelter from the rain and cold, and enters the cave. Upon his entering he starts to examine the cave, noting an understanding that the cave walls and ceiling is the limit of the outside and the beginning of the inside. This may create a nostalgic longing for the womb, imbuing him with feelings of protection. On exiting the cave he looks at the entrance and he recalls the image of the inside, and the idea of the cave takes shape. This allows him to identify the same possibility of shelter in another cave. After a few visits to different caves, the idea of the cave becomes a model.

This model functions so well that the stone age man is now able to recognise another's cave or a cave he does not intend to use from a distance. The model is codified in his mind. He communicates this model to other men using graphic signs. The model ultimately becomes iconic and becomes an object of communicative intercourse. The image of the cave communicates a possible function, even when it is not fulfilled nor an existing need to fulfil it.

With Eco's connotation of the womb as symbol denoting the cave, primitive man has acquired mental models and images of dwelling in nature which he could apply as referent to his mode of communication.

The roots of the origin of the most primitive of architecture, namely the hut, are embedded in nature, for example:

- the tree
- the cave

Fig. 56 architecture vs nature
Portoghesi states that all archetypes of architecture have been drawn from nature. The Ancient Greeks were one of the first advanced civilisations that developed the notion of nature as an aesthetic standard. Reducing the laws of nature into mathematical formulas. “As with other arts, so with building, the Greeks sought it in, and drew it out from the very bosom of Nature.” Alberti [Van Eck, 1996:25]

In book IX of Alberti’s On the Art of Architecture he defined architectural beauty as concinnitas. A term “used by Cicerov to characterise a style that is ‘closely knit,’ ‘elegantly joined’ or ‘skilfully put together.’” [Van Eck, 1996:24] Alberti states that buildings are like living organisms, and that architecture should imitate the methods of nature, for example in the way the human body is put together.

Through the Ages man has left his mark on nature. Portoghesi calls it a resistant sediment of objects and signs. And of this sediment, architecture is the most resilient of all its components. Man will continue to erect “his buildings onto nature assuming the role of continuator of Creation.” [Portoghesi, 2000:14]

“Architecture is a product of the transformation of the earth’s crust; it becomes a part of nature,” [Portoghesi, 2000:26] like the coral reefs, beaver dams, and sociable weaver nests etc. Man and nature have always engaged in a complex relationship, and somehow this relationship has been undermined and forgotten.

Fig. 57 architecture vs nature ii
Precedents_Baobab Toll Plaza (2004)
Mathews and Associates Architects
N1 Highway, Limpopo Province, South Africa

The toll plaza acts as the gateway of the North of South Africa. The architectural typology is an interpretation of the Baobab tree, indigenous to the Limpopo Province. The architecture illustrates how a project can take a semiotic approach where the final product can find a harmonic balance somewhere between the abstract and the literal.

Fig. 58 boabab toll plaza collage
The Forum Homini Boutique Hotel is a delicate blend of heavy and light architecture with the surrounding context informing and guiding the design process towards a final product. The concrete cave-like mass of the complex is countered by the delicate timber structure and decking. The character of the architecture plays with accents of stone cladding, complementing the rocky outcrops and the grass covered roofs seamlessly blending in with the savannah grassland.
Precedents _Tree House (1997)_

Van der Merwe Miszewski Architects

Cape Town, Western Cape, South Africa

It is apparent the nature was a major source of inspiration for the Tree House’s design. The cultivated Stone Pines at the foot of Table Mountain served as the concept for the house’s structural elements. The flowing walls and balustrades further enhance the allusion to nature. The architects broke away from what was expected and produced an extraordinary building that "is distinctly contextual, rooted - literally and figuratively - to its location." Dr Nic Coetzer [Joubert,2009:308]

Fig. 60 tree house collage
Precedents_Fynbos House (2005)
Sarah Calburn Architects
Betty’s Bay, Western Cape, South Africa

The Fynbos House stands out from the majority of the holiday homes in Betty’s Bay. It draws its inspiration from the bay’s sand dunes, resulting in slanting embankments and fynbos covered roofs. Two glass boxes punch through the vegetation alluding to the mountain range in the distance. The Fynbos House questions the relationship between architecture and its landscape by having the landscape become the architecture.

Fig. 61 fynbos house collage
Ken Yeang is the co-founder of Hamzah & Yeang which was established in 1975 in Kuala Lumpur. Best known for his low energy high-rise architecture or as he calls it, bioclimatic skyscrapers. Yeang has compared the high-rise architecture to the Boeing 747, stating that it is an "international piece of technology," Yeang,1995 [Matheou,1995:18] but it needs to respond to its setting and relate to its particular microclimate.

"Ecological design is my final agenda, my life's mission." Yeang,1995 [Matheou,1995:19]

His work throughout his career reflect this principle through-and-through and Ken Yeang will always be at the cutting edge of innovation.

Fig. 62 ken yeang collage
Precedents  

Federation Square (2002)
Lab Architecture Studio
Melbourne, Victoria, Australia

Federation Square has become the new heart in the Melbourne metropolis. Spanning across the city’s central railway tracks, it bridges the void that previously split the city into two. Drawing inspiration from the relatively new domain of fractal dynamics the architects created a distinct and unique architectural character, giving the city of Melbourne a new cultural centre and civic identity.

Fig. 63 federation square collage
Sketch proposal
Fig. 84 ground floor not too scale
Fig. 85 first floor not too scale
Fig. 86 second floor not to scale
Fig. 87 third floor not too scale
Fig. 88 north elevation not too scale
Fig. 89 east elevation not too scale
Fig. 90 south elevation not too scale
Fig. 91 west elevation not too scale
Fig. 92 north elevation and context not too scale
Fig. 93 east elevation and context not too scale
Fig. 94 south elevation and context not too scale
Fig. 95 west elevation and context not to scale
Fig. 96 section through the green tower not too scale
Fig. 97 section through the green auditorium not too scale
Fig. 98 south west perspective and context
Fig. 99 north west perspective and context
Fig. 100 south perspective and context
Fig. 101 north perspective and context