

CHAPTER 2

THEORETICAL BASIS

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The intention of the theoretical investigation is to determine a methodology of analyzing and intervening into a rich cultural and historically significant environment with a deeper understanding of the context, specifically focussing on the relationship of built fabric to public space.

2.1 INTRODUCTION

“A palimpsest is one such phenomenon in which simultaneous realities can exist. It is a mature document, a writing material (as a parchment or tablet) used one or more times after earlier writing had been erased made through the act of layering text. It is a collapse of linguistic hierarchy, inscribed often on parchment or vellum, with resultant qualities of transparency, collage, and visual complexity.” (DILLON, 2007: 7) Because things are written, erased and re-used there are many different authors. In terms of architecture and the urban environment a city can be read as a palimpsest with many different authors, erasing, re-writing and re-inventing spaces. With this in mind any new architectural intervention will be a new layer.

No layer can be considered the final layer and each speaks of its time and the identity of place at a specific time. To determine what a new layer should be requires an understanding of the layers that are already existing in that place at the time of intervening. N.J. Habraken describes the builder as an agent of change in: *The Structure of the Ordinary* (1998). He describes the way in which humans interact with the built environment, each generation striving for permanence and legacy, and in doing so changing the environment of the previous. (HABRAKEN, 1998).

Christopher Alexander proposes the idea; “A building cannot be a human building unless it is a complex of still smaller buildings or smaller parts which manifest its own internal social artifacts.” (ALEXANDER et al., 1977: 469). If we combine the understanding of palimpsest in the context of Alexander’s description of complexity, then the generator for design would be to use the layering of time and incrementality to create the smaller parts of a building or space.

An in depth exploration of what the “existing” entails, should be used to determine if new elements or smaller parts of a place should be introduced into the urban environment. This intervention, its identity and type, is informed by the Genius Loci (Spirit of Place) created by what once existed and what today still endures.

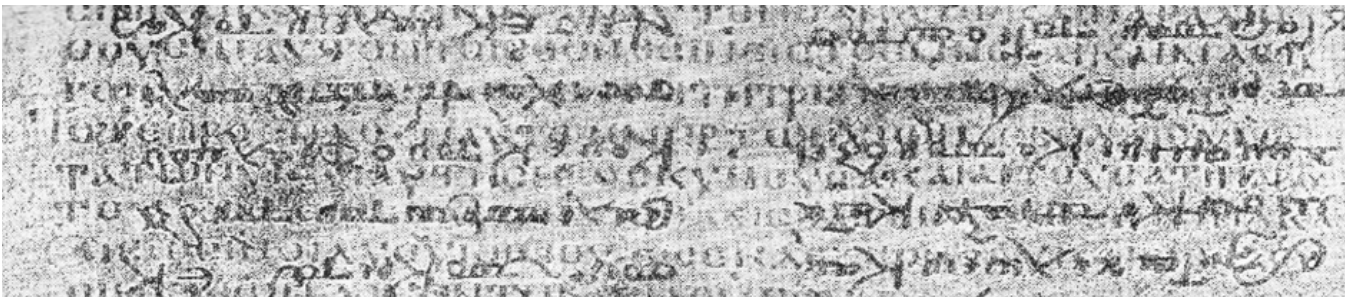


Figure 2.1 Example of a Palimpsest. (FROWDE ;1896)



Figure 2.2 Conceptual Palimpsest of Rua de Bagamoyo. Photograph by A



Author 2011 and R.Rangel 1970. (RANGEL, 2004. 35)

2.2 SPIRIT OF PLACE-GENIUS LOCI

"(this) Spirit gives life to the people and places, accompanies them from birth to death and determines the character or essence." (NORBERG-SCHULTZ, 1980: 18)

Norberg Schulz in his book; *Genius Loci* (1980) describes the Genius Loci by explaining that "the genius (thus) denotes what a thing is or what it wants to be" (NORBERG-SCHULTZ, 1980: 18) and Loci meaning position. Understanding what a place wants to be can be a very deductive process and an intuitive solution or it can come from an inductive understanding of a context. For the purposes of this dissertation the context is then read through various methods of engagement to gain an understanding of the spirit of place.

In terms of a public place, this involves a collective of the public, meaning that the Genius Loci does not only reflect the sense of meaning for a select group but for a collective consciousness.

2.3 CONTEXTUALISM

Refer to Section 3. 2- 3.6 for analysis and 5.2- 5.6 for urban application

Architecture has the ability to respond, and find strength in the positive nature of its response. Initially a design must respond to the needs of its user/s. Thereafter it is necessary to critically respond to the environment, which includes the socio-political parameters and the physical context .

The result of contextual response is architecture that creates and defines place within the parameters of an appropriate identity with the goal of heightening an existing identity. For the purposes of this dissertation these parameters are established through the application of theory as a framework in which to analyse the existing urban environments.

In her dissertation entitled; *Architectural contextualism in the twentieth century*, presented as part of a PhD Requirement, Jane Wolford Defines Contextualism as: "Contextual architecture is defined as architecture that creates a whole that is greater than the sum of its parts; in this paradigm allowable aspects of contextualism might relate to its ideological setting (such as the history of the site or possibly the function of the building), or its environmental setting, while remaining in the visual realm due to the human tendency to create visual linkages. " (WOLFORD, 2004: xxvii)

Published authors in the field of urban design; Matthew Carmona, Tim Heath, Taner Oc, and Steve Tiesdell state that: "Reacting both to modernist approaches and to contemporary development patterns, recent urban design has seen a new interest in the relationship between built space and urban space. This has led to attempts to organize parts so that the whole is greater than the sum of its individual buildings and developments." (CARMONA et al., 2003: 69)

Affirming the parallel nature of urban and architectural thinking Jane Wolford explores the architectural notion of contextualism. She introduces her text with a reaction to the modern methodologies of creating "dramatically different styles" and the general "disregard for past history or unique site considerations as well as its emphasis on rationality, functionality, and universality." (WOLFORD, 2004: 147)

Jane Wolford in her text was chosen because her PhD was published recently in terms of theoretical writing (2004) and her text allows for a clarity in understanding a contextual approach as it is broken down into manageable parts that are easy to understand, Her attempt was to create a clear definition of contextualism in architecture as a reaction to what she calls a "semantic confusion" with regards to contextualism in architecture.

She refers greatly to the visual appearance of the building, stating that "the essential ingredient herein posted is that of visual linkages being the differentiating factor between visually contextual architecture and other types of contextualism that may not be visually expressed." *She also boldly states that "When the visual link is not forged, then a buildings connection to its specific site or general locale is negated."*

Wolford has devised a table of twelve elements of contextual architecture based largely on the visual relationships to context. She has removed the social and intangible types of contextualism to create a clearer definition. For the purposes of this dissertation this is used as an initial starting point whereby the intangibles can be re-introduced additionally to the visual. This allows for a respect for her view of the



Figure 2.3 Contextual architecture as a method of fitting a building where it belongs. Graphic by Author

WOLFORD'S ELEMENTS OF ARCHITECTURAL CONTEXTUALISM

Contextualism in general is defined as the relationship of parts to the whole (e.g., as a puzzle piece to the entire puzzle). *Architectural Contextualism*, more specifically, refers to the harmonious relationship between individual buildings and their natural or built surroundings. Architectural contextualism is comprised of both physical features (i.e., the building's site, massing, materials, position, scale) and symbolic aspects (i.e., the building's ambiance or identity) since humans relate to both these levels of reality — material and non-material, (i.e., conceptual, spiritual). The *Zeitgeist* also can be embedded in the following elements related to buildings to create a contextual design:

1. **SPECIFIC SITING** (on the meso-scale, the geographical features of the individual site, such as its shape, amount of vegetation, or existing architectural features such as a portion of an existing building sharing the site. Site lines come into play here too).
2. **GENERAL LOCALE** (on the macro-level, the more global physiographic aspects of the landscape, such as entire mountains or a group of buildings in a larger context).
3. **SHAPE** (i.e., general outlines, including roof lines)
4. **SIZE** (i.e., physical dimensions of height, width, or length)
5. **COLOR OF MATERIALS**
6. **TEXTURE OF MATERIALS**
7. **TYPE OF MATERIALS**
8. **POSITION** (i.e., relative location to the whole)
9. **STYLE** (i.e., major motif)
10. **RHYTHM OF ELEMENTS** (i.e., repetition of columns, windows, or doors)
11. **SCALE/ PROPORTION** of building parts to each other
12. **IDENTITY** (i.e., ambiance or symbolic meaning)

visual contextualism to be paramount with the intangible to be additional to that.

2.4 CHARACTER AND ESSENCE

Character of place, according to Wolford, is determined by the visual and aesthetic qualities of a building as read by her twelve points. For the purposes of expanding on her guidelines, the historical and social essence needs to be determined.

2.5 HISTORICAL SIGNIFICANCE AND HERITAGE.

Refer to Section 3. 6 for analysis and 5.7 for urban application

The heritage value of place and cultural significance is determined using the 1999 updated Burra charter 1999 with reference the Nara Document 1994.

The Burra charter is a document developed by ICOMOS (The international council on monuments and sites) at Burra in Southern Australia in 1979. Revisions were adopted in 1981, 1988 and most recently 1999. The document is intended to act as a guideline for the conservation and management of "places of cultural significance." (ICOMOS, 1999)

The Burra charter explains that "The aim of conservation is to retain cultural significance of place" (ICOMOS, 1999). Fig.2.5 Shows the process in which the significance should be determined using all available tools to gain a clear understanding of significance. For the purposes of this dissertation these are dealt with theoretically and do not involve the physical, thus only the selected criteria are relevant.

To understand the meaning of cultural heritage , The *Nara Document on Authenticity 1994* explains that : Cultural heritage diversity exists in time and space, and demands respect for other cultures and all aspects of their belief systems. In cases where cultural values appear to be in conflict, respect for cultural diversity demands acknowledgment of the legitimacy of the cultural values of all parties. (ICOMOS, 1994).

To explore the notion of cultural heritage diversity photographic analysis of historical photographs is done to find the elements in the built form and activities that have changed and those that have an inherent perpetuity.

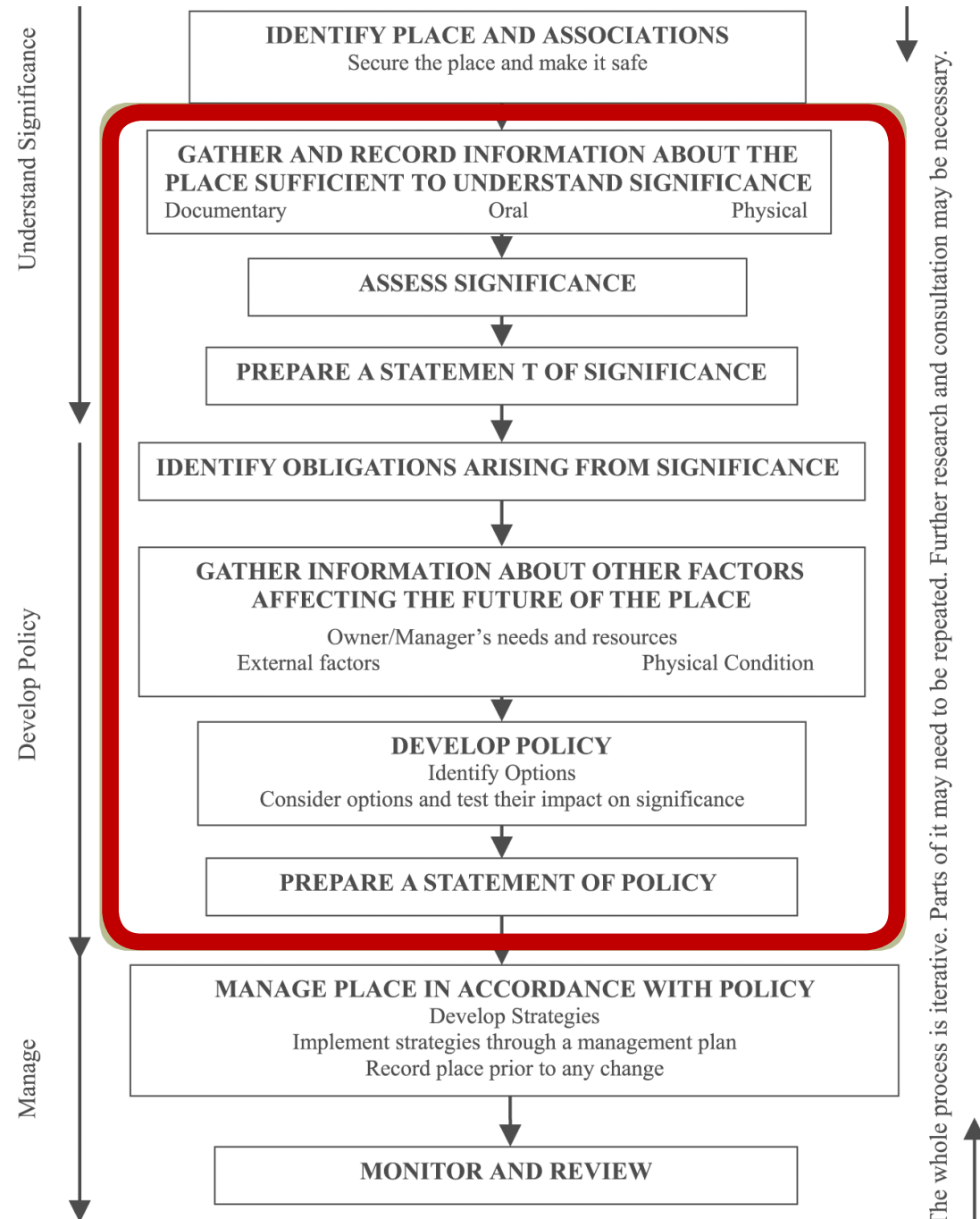


Figure 2.5 Table showing the process of using the Burra charter (ICOMOS; 1999)

2.6 SOCIAL UNDERSTANDING

Refer to Section 3.7 for analysis and section 5.8 for urban application.

Assessing the social significance and human-building interface, a mapping of users is done on the street level. The way in which a user uses, manipulates or appropriates ownership of the street is explored.

Patterson and Mammon define the idea of public spaces in the paper; *Urban space, memory and the public realm*: "The public realm is the only space in the city that provides opportunities for public interaction. It comprises the spaces outside of the private, semi-private and nowadays privatized domains. It represents the spaces and places of everyday activity for all citizens. It provides platforms for interaction, debate, contestation, dialogue and celebrations." (PATTERSON and MAMMON, 2005: 2)

Carmona et al state that; "A space and society are clearly related: it is difficult to conceive of space without social content and equally to conceive society without a spatial component." It then follows that if society is the collective, human user of space, then that collective will have a public space where there is accessibility, activity, security for that collective society. Further to that it follows that social relations have an impact on the development of space.

The idea of the societal influence on space is reinforced by Fran Tonkiss as she proposes; "Divisions of space are not simply physical facts but social products." She expands on the idea by stating; "Spatial Boundaries are formed by and reproduced by social action and also impress themselves on ways of thinking. Modes of separating and connecting spaces (borders, boundaries paths bridges) give objective form to subjective understanding of space and then serve to conduct the subject in space" (TONKISS, 2005) Bryan Lawson refers to this notion as the *Language of space*. In his book with the same title, he explained the notion in very simple examples of how people interact with their surroundings based on the spatial directions given but the environment. (LAWSON, 2001: 6)

Public space remains in control of the citizen and ownership of the space is then governmental or public, but in the presence of public space there must be the realm of private space under the ownership and control of the individual. In between these two realms exists a threshold and a division.

The street can be considered the public space, it can be "...conceived as the place where social contact between local residents can be established." (HERTZBERGER, 1991:48) The buildings interface with the street should then be understood as the threshold or division between public and private.



Figure 2.6 Photograph showing relationship of street trade to building edge in Maputo, Photograph by Author 2011

2.7 HARMONICS

Refer to Section 3. 8 for analysis and Section 5. 9 for urban application

To understand the energy and vibrancy within the built environment, a theory is taken from the field of physics. Using the mathematical relationships that exist in nature with regards to energy as a precursor to understand an intangible quality of place.

The Law of conservation of Energy in Physics states that; "The total amount of energy within a closed system remains constant over time." A street precinct is not a closed system and therefore the energy cannot be considered constant over time.

Obviously the fluctuations can be measured but they need to be measured in comparable opportunities.

Light is a manifestation of energy that occurs in nature as a wave form. Energy is illustrated in a wave form in most of its manifestations, be it electrical, light sound.. etc.

Energy embodied in a street is not pure light but rather contains the energy of movement, economic energy, sound, force vehicular..etc Therefore the wave of energy contained in a street would not constitute a pure sinusoidal wave but rather a complex wave:

Complex waves can consist of several pure sine waves of different amplitudes and frequencies. The main sine wave is called the fundamental and has the same frequency as the complex wave. Harmonics are the other component sine wave frequencies that are in exact multiples of the fundamental frequency. (VAN ZYL, 2006: 112-113)

To break down street life energy and activity is to de-construct the complexity by means of harmonics.

The harmonics to be measured on a street would include light, sound and human activity.

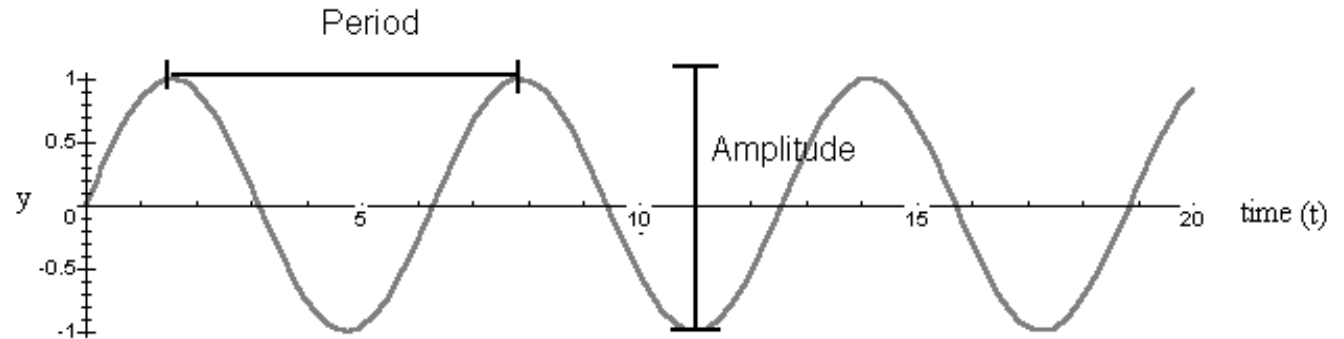


Fig 2.7 Sine wave with time on x-axis

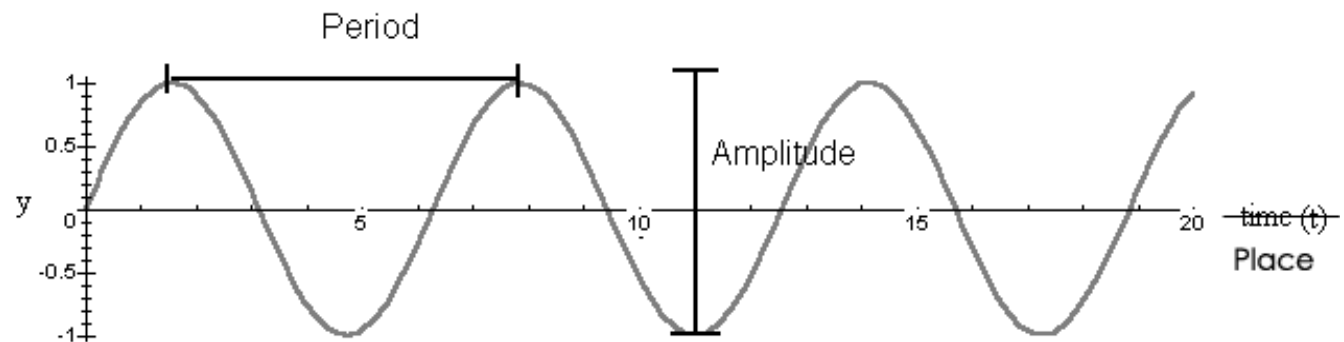


Fig 2.8 Sine wave with place replaced with time on the x-axis

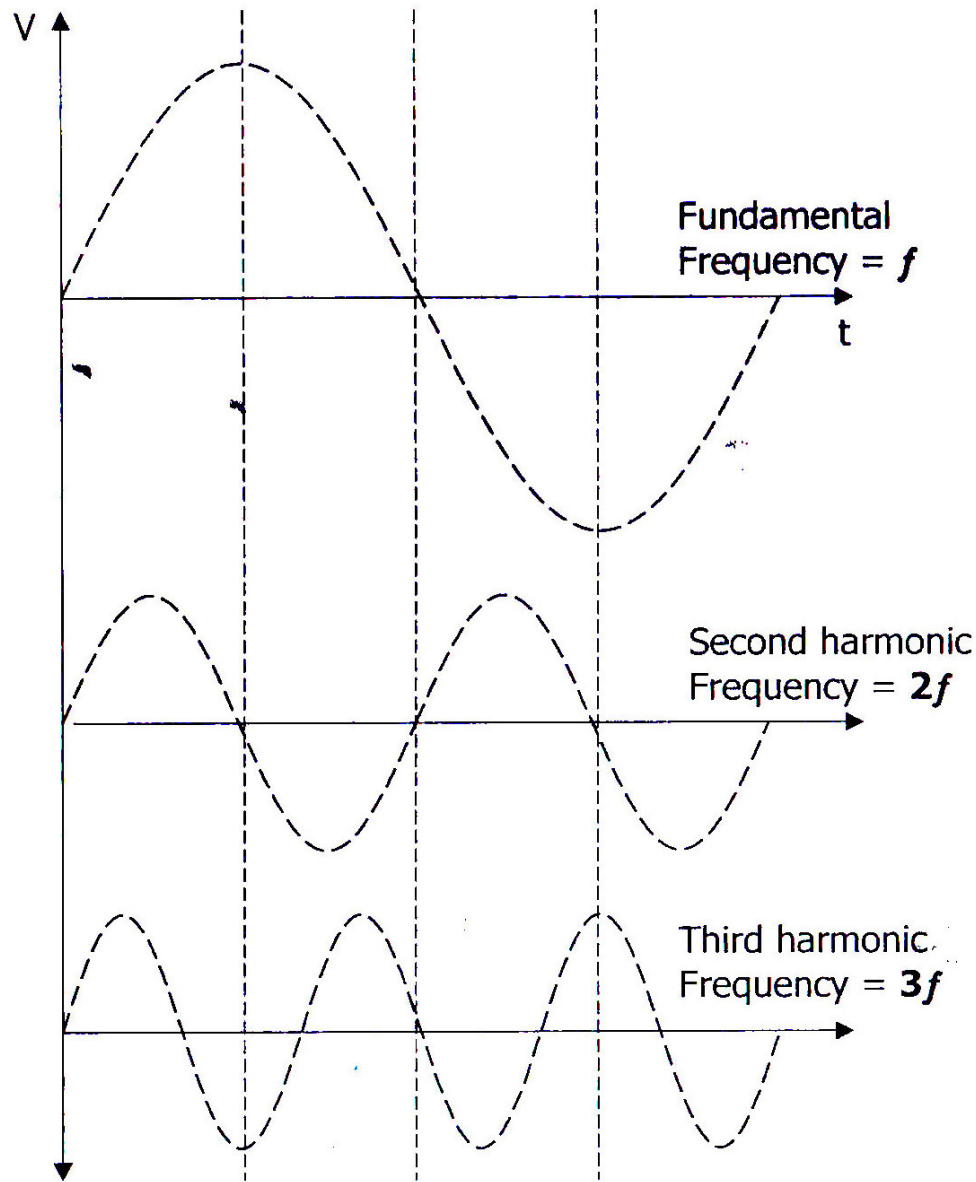


Fig 2.7 Example of how a complex wave is separated into harmonics (VAN ZYL; 2001)

These parameters are determined by on site observations of human activity taking place in the shade during the day and in well lit areas at night.

Sound is included as it is a component of atmosphere and is a result of human activity.

Sound, light sound and activity are mapped in the form of a graphic¹ representation (meaning on a graph of Cartesian co-ordinates). These elements of energy are considered the harmonics of energy as a contributor to the atmosphere of the street.

The main fluctuation within an urban precinct or street through a 24 hour period is the change in light quality from day to night. This prescribes that the fundamental wave should be that of light within the street.

The harmonics there-of will then follow to be the human energy relationships to this fundamental.

As we have established, the constant within a street cannot be time, as the precinct is not a closed system. Place and position are however constant and will therefore be used in place of time on the x-axis.

¹ The "graphic" when dealing with harmonics refers to graph of Cartesian co-ordinates

2.8. CONCLUSION

The guidelines put forward by the four theoretical topic inform four methods of analysis to understand the context.

Jane Wolfords techniques are applied to a formal mapping of functions, aesthetics and proportion.

The heritage significance is explored through the mapping of built form and interviews with users to determine significance done in 2010 as part of the Maputo studio.

To explore the intangible components of this heritage photographic analysis of the work of Ricardo Rangel is done to try to understand the perpetuity of a Genius loci.

The Social theory is applied to on site observations about how the users interact with the built fabric, how spaces are used and manipulated by various user who take ownership of the public.

The Harmonic analysis is done by mapping each type of energy identified by the parameters to determine a pattern or formula of the existing that can be manipulated to create continuity and balance.