

Buildings as Text:
Developing a Semiotic of Bombay's Art Deco Architecture (1930-1949)

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by

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Contents

Abstract	xiii
List of Figures	xxi
List of Tables	xxiii

Chapter 1 Introduction.....	1
1.1 Introduction to Art Deco architecture in Bombay (1930-1949).....	3
1.2 The City Improvement Trust 1898 and its Influence on Built Form.....	4
1.3 Art Deco- the Development of a Style.....	5
1.4 The Proliferation of Art Deco Architecture in Bombay and the Rest of India	6
1.5 Inspiration for this Research	8
1.6 Motivation for this Research	9
1.7 Area of Focus	11
1.8 Aim of the Research.....	12
1.9 Objectives of the Research.....	12
1.10 Research Assumptions	12
1.11 Chapterization- Organization of the Thesis	13
1.11.1 Contextualization	13
1.11.2 De-contextualization.....	14
1.11.3 Re-contextualization.....	17

Chapter 2 Review of Literature	19
2.1 On Art Deco, internationally	21
2.2 On Indian Architecture during 1930-1949	23
2.3 On Bombay's architecture during 1930-1949	23
2.4 On Relevant Literature published in Bombay during 1930-1949.....	25
2.5 On Semiotic Tools and Analysis	27
2.6 Gap Survey	32
2.7 Research Questions	33

Chapter 3 Research Design	35
3.0 Introduction	35
3.1 Methodology and Research Design	36
3.2 Some Assumptions	38
3.3 Participants in the Survey Conducted.....	39
3.4 Limitations of the Research Design	40
 Chapter 4 Buildings as Text: Identifying Semiotic Signifiers/attributes from the Object/Text using Intra-Objectual and Inter-Objectual Relationships.....	 41
4.0 Introduction	41
4.1 Buildings as Text: Object Analysis.....	42
4.2 Developing a Theory of Objects	43
4.3 Functions performed by the Object/building	44
4.4 Inter-Objectual and Intra-Objectual relations	44
4.5 Generating a Semiotic Space- the Semiotic Square	45
4.5.1 Paired Concept 1- Cinema and Art Deco	48
4.5.1.1 Semiotic Analysis.....	48
4.5.2 Paired Concept 2- Art Deco and Bombay	50
4.5.2.1 Semiotic Analysis.....	50
4.6 Intra-objectual relations in Object/building	51
4.6.1 Plastic Contrasts- Formants	51
4.6.2 Plastic Contrasts- Discontinuities	52
4.6.3 Plastic Contrasts- Superimpositions	52
4.7 Formants and sub-formants	53
4.7.1 The core and the envelope.....	55
4.7.2 Narrative Syntax	56
4.8 Discontinuities	56
4.8.1 The Actantial Model.....	57
4.8.2 Actantial Analysis of an Art Deco Cinema House.....	59
4.9 Superimpositions.....	67
4.10 Inter-Objectual Relations in the Object/building	70
4.11 Object/building and Art Deco Architecture (Bombay and India)	70

4.12 Art Deco architecture as ‘family resemblance’	72
4.13 Determining ‘Art Deco-ness’	72
Chapter 5 Developing Art Deco Exemplars	75
5.0 Introduction	75
5.1 Basic Objects	78
5.2 Exemplars	79
5.3 Graded Structures	81
5.4 Charting Family Resemblances: mining resources for basic objects to generate exemplars ..	82
5.4.1 Bevis Hillier	83
5.4.2 Laxmi Bhaskaran	83
5.4.3 Patricia Bayer	84
5.4.4 Mario Gagliardi	85
5.4.5 Judith Miller	85
5.4.6 Michael Windover	86
5.4.7 The City of Miami Beach Workbook	86
5.4.8 Navin Ramani	86
5.4.9 Amin Jaffer	87
5.4.10 Jon Lang	87
5.4.11 Kamu Iyer	87
5.5 Generating Basic Objects	88
5.6 Basic Level Categorization	91
5.6.1 Formants	92
5.6.2 Discontinuities	93
5.6.3 Superimpositions	94
5.7 The Relevance of Inventory	96
5.7.1 The Limitation of the Inventory	97
5.7.2 The Inventory	98
5.7.2.1 Inventory CINEMA HOUSES	98
5.7.2.2 Inventory OFFICE BUILDINGS	99
5.7.2.3 Inventory APARTMENT BUILDINGS	99
5.8 Semiotic Breakdown: creating a tool for working with inventories	101

5.9 Developing an exemplar for Bombay’s Apartment Buildings	103
5.9.1 Example: Rusi Court, Oval Maidan	106
5.9.2 Exemplar for Art Deco Apartment Buildings	107
5.10 Developing an exemplar for Bombay’s Cinema Houses	107
5.10.1 Example: Liberty Cinema, Bombay	109
5.10.2 Exemplar for Art Deco Cinema Houses	111
5.11 Developing an exemplar for Bombay’s Office Buildings	111
5.11.1 Example: United India Assurance Building	113
5.11.2 Exemplar for Art Deco Office Buildings	115
5.12 Inferences	115

Chapter 6 A Semiotic Mapping of Bombay’s Art Deco Architecture (1930-1949)118

6.0 Introduction	118
6.1 Basic Order Mapping	119
6.1.1 Formants	121
6.1.1.1 Functional:.....	121
6.1.1.2 Narrative:	122
6.1.2 Discontinuities	123
6.1.2.1 Vertical/ Horizontal Discontinuities	124
6.1.2.2 Base Plane/ Laminar	125
6.1.3 Superimpositions	127
6.1.3.1 Enhancers	128
6.1.3.2 Nuancers	129
6.2 Basic Order Identification- Cinema Houses.....	131
6.2.1 Top 10 Cinema Houses closest to the Exemplar	132
6.2.2 Cinema Houses- Most Shared Objects (out of 20).....	133
6.2.3 Top 10 Cinema Houses- Top 10 Most Shared Objects.....	134
6.3 Basic Order Identification- Office Buildings	134
6.3.1 Top 10 Office Buildings closest to the Exemplar	136
6.3.2 Office Buildings- Most Shared Objects (out of 25).....	137
6.3.3 Top 10 Office Buildings- Top 12 Most Shared Objects.....	138
6.4 Basic Order Identification- Apartment Buildings	138

6.4.1 Top 10 Apartment Buildings closest to the Exemplar	141
6.4.2 Apartment buildings- Most Shared Objects (out of 61)	142
6.4.3 Top 10 Apartment Buildings- Top 15 Most Shared Objects.....	143
6.5 Perceptual Survey	144
6.5.1 The Perceptual Survey- Data.....	145
6.5.2 Association of Basic Objects with Art Deco architecture.....	146
6.5.3 Buildings as best examples of Art Deco architecture	147
6.5.3.1 Cinema Houses perceived to be best examples (by 79 respondents)	147
6.5.3.2 Office buildings perceived to be best examples (by 79 respondents)	148
6.5.3.3 Apartment buildings perceived to be best examples (by 79 respondents)	148
6.6 Weighted Basic Object Mapping	148
6.6.1 Cinema Houses	150
6.6.2 Office buildings	151
6.6.3 Apartment buildings	152
6.7 Summary	154
Chapter 7 Findings and Analysis	155
7.1 Introduction	155
7.2 Cinema Houses- Findings	156
7.2.1 Cinema Houses- Most Shared Objects	156
7.2.2 Cinema Houses- Most Proximal to the exemplar	157
7.2.3 Cinema Houses in Bombay	158
7.2.4 Cinema Houses outside Bombay	159
7.2.5 Cinema Houses- Inferences.....	160
7.3 Office Buildings- Findings	160
7.3.1 Office Buildings in Bombay	160
Figure 7.10 Oriental Building, Chennai, built in 1935.....	164
7.3.2 Office Buildings outside Bombay	164
7.3.3 Office Buildings- Inferences.....	165
7.4 Apartment Buildings- Findings	166
7.4.1 Apartment buildings- inventory	166
7.4.2 Apartment Buildings- Proximity of Basic Objects	166

7.4.3 Apartment Buildings- Observations by Precinct	170
7.5 Weighted Basic Object Mapping	171
7.5.1 Cinema Houses- Graded readings	171
7.5.2 Office Buildings- Graded readings	174
7.5.3 Apartment buildings- Graded readings.....	176
7.6 The Relevance of the tool and conclusions	179
Chapter 8 Conclusions.....	185
8.01 Reading Buildings as Semiotic Texts	186
8.02 Synchronous Readings of Art Deco Buildings.....	187
8.03 The Culturally Salient Object Exemplar.....	187
8.04 Signification of Bombay's Art Deco Facades	188
8.05 Self-similarity and Semiotic Meaning.....	190
8.06 The Perceptual Survey and the Socialization of Signs	191
8.07 Cinema Houses defining a semiotic for a 'Golden Age' for Art Deco in Bombay.....	192
8.08 Office Buildings as resultants of eclectic choice-making.....	194
8.09 Apartment Buildings- a template for Art Deco as urban fabric in Bombay	196
8.10 Re-contextualization	198
8.10.1 Re-contextualization- Modernism and Art Deco architecture in Bombay	198
8.10.2 Re-contextualization- Indian architecture for the Indian citizen.....	203
8.10.3 Re-contextualization- Contemporary Relevance.....	206
8.11 Addressing the gaps in the discourse on Bombay's Art Deco architecture	208
8.12 Contribution to the Field	211
8.13 Future Work	212
Glossary of Terms.....	213
Appendices	219
Select Bibliography	243
Publications by the Candidate.....	253
blank	254
Acknowledgements	255

Abstract

Keywords: Art Deco, Bombay, Mumbai, architecture, facades, cinema houses, apartment buildings, office buildings, semiotic analysis, basic objects, exemplars, Indian modernism

The intent of this PhD research is to critically examine the language of Bombay's Art Deco architecture from 1930 to 1949 in order to develop a semiotic to read meaning into its form. Current research is largely historical, and tends to look at Bombay's architecture in the penultimate decades before Indian independence, as a transitory phase in the larger history of practice before National Statehood. By retrospectively describing this architecture as 'Art Deco' (the term came into common currency from the '60s), this period has been studied as a stylistic label, with the baggage of colonialism (the copying of a foreign architecture) and revivalism weighing it down. Such an approach regards all the buildings of a particular period as more or less homogeneous, and built out of the same common motivating factors.

What has not been researched so far are the buildings themselves- as primary texts; independent of the aforementioned baggage. There is a need to address this lacuna by a direct and critical analysis of this architecture in its specifics, observable in a great variety and diversity of building types all over Bombay (and India) at the time. What has not been analyzed so far is the nature of this variety. This PhD research is an attempt to occupy that space. In examining the facades of cinema houses, office buildings and apartment buildings of the period 1930-1949 our aim was to read these buildings as the billboards of their age, as metonymic representations of the whole. In previous work done on the subject this vital component has not been tackled and our intention

has been to research into these buildings as rich semiotic/semantic texts. Our research looks at these buildings as objects in themselves and seeks out semiotic congruency in the buildings of Bombay during the 1930s and 1940s. The processes, methods and tools adopted are semiotic, and the objects/buildings examined and analyzed synchronously and (largely) from an ahistoric standpoint.

The methodical framework we used for carrying out this research was as follows:
The building facades under study were looked at as cultural products of their time and contextualised in order to appreciate the ‘conventional meanings’ attributed to them.

A detailed review was made of the available literature on the architecture of the period. The writings of that time, its place in the theoretical discourse of architectural development and visual style discussed. Architectural research on the subject was analysed for relevance and in a semiotic context. This allowed for the clear establishment of gaps in the literature available with an aim to gain valuable results in terms of semiotic meanings and readings of architecture.

Using a definition from literary theory, a text may be any object is a readable set of signs transmitting an informative message that gives out meaning. Bombay’s buildings of the 1930s and the 1940s were studied as signifiers, to gain a deeper and more nuanced understanding of the buildings of that period, extracting semiotic meaning in order to complement and take forward current historical research on the subject. In order to observe these buildings as texts, the facades were seen as ‘actants’ with intra- and inter-objectual relations. A facade was, therefore considered to be an object/body, and examined for semiotic significance using the tools set out by Alvise Mattozzi (2007). This allowed for the establishment of relationships between formants (and sub-formants) that could be identified and isolated, and synthesized to derive meaning from their objectual relationships. We created inventories populated with Art Deco facades of cinema houses, apartment buildings and office buildings of Bombay (and outside Bombay, selectively) constructed during the period 1930-1949 (and beyond, selectively) that formed our semiotic resource. These were united by social imperatives and design traits.

Eleanor Rosch speaks of ‘best’ examples of conceptual categories that are rich, imagistic, sensory, full-bodied mental events that serve as reference points (1999). Rosch describes these best examples as ‘*exemplars*’, which are culturally salient objects. *Object exemplars* are often the basis on which people classify objects (Shore, 1996, p. 64). The set of research tools chosen for this semiotic analysis were used to observe and analyse the signification of *objects*. These properties are used to generate an ‘exemplar’.

Based on the determination of exemplars, a bundle of features or Basic Objects were derived, and then validated for proximity. These properties were then be searched for, metonymically, in other such objects for ‘self-similarity’ or ‘family resemblances’. The aim of this research is to find, if any, patterns of collective significance in the buildings of Bombay from 1930-1949.

The identification of Basic Objects so created allowed for a return to the positioning of the exemplar derived from the research of Uday Athavankar (1990), who proposes a model of ‘graded membership’ based on a ‘shared features’ notion of categorization. This resulted in the agglomeration of objects with the most frequently associated features around the central member, while other objects where the feature were seen with lesser frequency trailed off to an indistinct boundary. Finally, if the chosen ‘exemplar’ can be said to represent the ideal architecture of Bombay during the period 1930-1949, then buildings agglomerating closest to it array themselves in agglomerations or spread away from the exemplar. Findings derived from the analyses were re-contextualised in the historical discourse and conclusions drawn from this. This has shed new light into the practice of Art Deco architecture in Bombay as a discourse of social production and consumption.

The need for locating the conclusions of this research in the larger context of architectural discourse was felt. Practical implications for future users/ readers were spelt out. The possibility of generalising both methods and findings into the examination of other forms of architecture/object/texts were discussed.

This research has produced a better understanding of Art Deco architecture in Bombay as significant producers of meaning. We believe that our research contributes to the architectural

history of pre-independence Bombay and India, Art Deco architecture and building facades, and offers methods for any future semiotic analyses in architecture. There is a further scope of using the tools adapted for this research in the analysis of buildings other than Art Deco as having inherencies and salience. We believe that this research has made significant contributions to the field of architectural design and historical research.

Organization of Chapters

We began this research into reading Art Deco Architecture in Bombay (1930-1949) as texts by first locating the buildings as cultural productions of their time. Over the years some of these buildings have become best examples, especially in contemporary readings. In our first two chapters, we attempted to ‘contextualise’ the buildings, and to appreciate the ‘conventional meanings’ attributed to them.

The Chapter 1 (Introduction) we explain the significance of Bombay’s architecture in the period between 1920 and 1949, and its locational and chronological importance in the history and development of architecture in Bombay and India. The buildings of the time are placed in the context of socio-economic and technological changes, and the development of architectural practice at that time is especially highlighted. The immediate and widespread popularity of this form of building is the result of being embraced by the public at large as an architecture they could call their own. The collective appreciation of these buildings ties in with a certain optimism seen in the penultimate decades before Indian independence and can be appreciated as a minor social revolution, in anticipation of the imminent nation state. It is for this reason that, to develop a semiotic for the buildings of this period- 1930-1949 the gaze and the method of analysis has to be a through synchronous readings. This chapter also lays out the essential; focus of the research through clearly articulated aims and objectives and presents research questions that will be addresses in the course of this thesis..

In Chapter 2 (Review of Literature) we delve in detail into the available literature on the architecture of the period. The writings of that time, its place in the theoretical discourse of architectural development and visual style are discussed. Architectural research on the subject was analysed for relevance in a semiotic context. A critical evaluation of the current literature is

made for its significance in the understanding of the architecture under study as well as lacunae in the present writings are highlighted. The literature on the semiotics of architecture is discussed as a series of base texts to provide the arguments to anchor the study and delimit its scope. A statement of how the analysis of existing literature, theoretical writings and critical readings has led to the framing of research questions was made. This allowed for the clear establishment of gaps in the literature available with an aim to gain valuable results in terms of semiotic meanings and readings of architecture.

In Chapter 3 (Research Design) we discuss the generation of a methodology for creating a semiotic. This is in the form of tools that were used to generate and record data based on the theoretical underpinnings described in previous chapters. Assumptions made in the carrying out of the research as well as the potential limitations of the methodology are discussed.

In Chapter 4 (Buildings as Text: Identifying Semiotic Signifiers/attributes from the Object/Text using Intra-Objectual and Inter-Objectual Relationships) we considered a building to be an object/body with imperative examined for semiotic significance using the tools set out by Alvise Mattozzi in his paper ‘A Model for the Semiotic Analysis of Objects (2007)’. Mattozzi assumes that an Object is a body; an object is an intersecting point in a network of relations; the object itself takes part in these relations and that other actors (objects) interact with it. For the purposes of study these relationships are identified as occurring between formants (and sub-formants) that can be identified and isolated, and later put together to derive meaning from their inter-objectual and intra-objectual relationships. We identified a set of formants, discontinuities and superimpositions for the buildings to be inventoried for the presence/ absence of several ‘Basic Objects’. This hypothetical building is considered an ‘exemplar’ for the purposes of research that every building is measured against these collectively for the semiotic resource that shall be used for further analysis.

In Chapter 5 (Developing Art Deco Exemplars), we compiled inventories of buildings that to be studied as semiotic resource. These included cinema houses, office buildings and apartment buildings from Bombay (and outside Bombay, selectively) constructed during the period (1930-1949). Eleanor Rosch speaks of conceptual processes that work, not with precision of

categorisation, but with a fuzzier strategy of placing similar objects together based on an example that fits that category the best. These categories tend to be at a level of specificity intermediate between global inclusiveness and perceptual particularity. Rosch describes these best examples as '*exemplars*', which are culturally salient objects, people, or events. Exemplars typify experiences by representing a best case or ideal version and become the model against which other similar experiences are matched. *Object exemplars* are often the basis on which people classify objects (Shore, 1996, p. 64). The set of research tools chosen for this semiotic/semantic analysis is used to observe and analyse the signification of *objects*. Using the available literature on these buildings we identified a series of Basic Objects on the facades of the buildings in our inventory and used these to develop an exemplar for each of the three categories of buildings under study.

In Chapter 6 (A Semiotic Mapping of Bombay's Art Deco Architecture (1930-1949) we present the outcome of using the tool of Basic Object Mapping set out in the Research Design. The mapping was the result of the identification of Basic Objects that were derived from the statement of an exemplar in Chapter 5. Here, Basic Objects were derived from the buildings in the inventory, and stratified into 3 categories- formants, discontinuities and superimpositions that allowed for the identification reading and nuanced appreciation of the facades under study. Our methodological pursuit leads us to mapping Basic Objects on all the Cinema Houses (20), Office Buildings (25) and Apartment Buildings (61) in our inventory. This was carried out, first, as an identification of presence/absence of the elements on the facades (un-weighted). The same exercise is carried out after giving weighted scores to the presence/absence of Basic Objects. The weights are derived from a Perceptual Survey carried out with respondents who were aware of Art Deco architecture, and who were shown 35 Basic Objects for their perception on which of them represented Art Deco architecture best. Based on their responses the weights were derived and assigned to each of the Basic Objects. This allowed us to make two readings of all the facades in the inventory (weighted and un-weighted). In both cases it was possible to chart the buildings under study as closest to the exemplar and furthest away.

In Chapter 7 (Findings and Analysis) we presented the results of the study based on the tools deployed in the previous three chapters were collated and presented. The findings were discussed for their implications within the methodologies applied.

In Chapter 8 (Conclusions) we re-contextualised the findings of our semiotic analysis of the facades of the buildings in our inventory, to put our new knowledge back into the current historical discourse, This allowed us to fill certain gaps the literature present an offer a more nuanced way of understanding Art Deco architecture in Bombay during the period 1930-1949. Our conclusions bring new insights into appreciating Art Deco architecture in Bombay as a discourse of social production and consumption. Practical implications for future users/ readers were spelt out. The possibility of generalising the semiotic tools used and findings into the examination of other forms of architecture/object/texts were discussed.

List of Figures

Figure No.	Caption	Page No.
4.1	The Semiotic Square by A. J. Greimas Source: (Chandler, 2005)	46
4.2	Paired Concept 1- Cinema and Art Deco in the Semiotic Square	47
4.3	Paired Concept 2- Art Deco and Bombay in the Semiotic Square	49
4.4	Intra-Objectual Relationships	51
4.5	Plastic Contrasts (Formants, sub-formants, discontinuities, superimpositions) on an Object/Building	53
4.6	Formants and Sub-formants on Rusi Court, Bombay Source: (The Associated Cement Companies Limited, 1937)	54
4.7	Core and Envelope as seen on the Eros Cinema, Bombay	55
4.8	Narrative Syntax breakdown of a Cinema House in Bombay	58
4.9	The Actantial Model (after Greimas, 1966)	59
4.10	Actants on the Eros Cinema, Bombay	60
4.11	Actantial Model, as applied to the Eros Cinema, Bombay (after Greimas, 1966)	60
4.12	Process Discontinuities observed on the Industrial Assurance Office Building, Bombay, Source: (The Cement Marketing Company of India Limited (Publicity Department), 1942?)	62
4.13	Vertical and Horizontal Dynamics	63
4.14	Process Discontinuities 1- The heroic and the quotidian	64
4.15	Process Discontinuities 2 The heroic nucleus	65
4.16	Process Discontinuities 3 The quotidian envelope	66
4.17	Nuancers on the facade of Swastik Court, Oval	67
4.18	Enhancers on the facade of Soona Mahal, Marine Drive	67
4.19	Isotopy- Superimposed Nuancers and Enhancers on Art Deco Buildings	69
4.20	Various types of Art Deco buildings in Bombay and India as paradigms for Object/ building	71
5.1	Formants and Actancts on an Object/Body	93
5.2	Formants/Actants and Discontinuities	94
5.3	Apartment Buildings, some examples from the inventory Source: (The Associated Cement Companies Limited, 1937)	103
5.4	Rusi Court- Formants Source: (The Associated Cement Companies Limited, 1937)	106
5.5	Rusi Court- Discontinuities and Superimpositions	106
5.6	Cinema Houses, some examples from the inventory Source: (Dwivedi & Mehrotra, 2008)	108
5.7	Liberty Cinema- Formants	110
5.8	Liberty Cinema- Discontinuities and Superimpositions	110
5.9	Office Buildings, some examples from the inventory Source: (The Associated Cement Companies Limited, 1937)	112
5.10	United India Assurance- Formants	113
5.11	United India Assurance Discontinuities and Superimpositions	113

Figure No.	Caption	Page No.
6.1	Top 10 Cinema Houses closest to the Exemplar	133
6.2	Top 10 Office Buildings closest to the Exemplar	137
6.3	Top 10 Apartment Buildings closest to the Exemplar	142
7.1	Basic Objects on Liberty Cinema shared in common with all the top 10 Cinema Houses closest to the exemplar	156
7.2	Cinema houses closest to exemplar based in Identification, weighted mapping and Perceptual survey	157
7.3	The Aurora, Matunga built in 1940	158
7.4	Maratha Mandir built in 1958	158
7.5	The Anna Malai, Madurai (undated)	159
7.6	The Phul, Patiala (undated)	159
7.7	Basic Objects on Industrial Assurance Building shared in common with all the top 10 Office Buildings closest to the exemplar	161
7.8	Office Buildings closest to exemplar based in Identification, weighted mapping and Perceptual survey	162
7.9	Laxmi Building, Bombay, built in 1938	163
7.10	Oriental Building, Chennai, built in 1935	164
7.11	United India Building, Chennai, built in 1940	164
7.12	Mysore Bank, Chennai, built in 1957	164
7.13	Parry's, Chennai, built in 1938	164
7.14	Indian Merchants Chambers, Church Gate, built in 1940	165
7.15	Kent House, Pheroze Shah Mehta Road, built in 1935	165
7.16	Basic Objects on Fair Lawn and Rusi Court shared in common with all the top 10 Apartment Buildings closest to the exemplar	167
7.17	Gyani Manzil- Apartment Buildings closest to exemplar based in Identification, weighted mapping and Perceptual survey (The Associated Cement Companies Limited, 1937)	168
7.18	Oval Maidan Precinct, 1936	170
7.19	Marine Drive Precinct, 1940s	170
7.20	Eros, Bombay, built in 1938	174
7.21	Shiela, Delhi, built in 1961	174
7.22	Edward, Bombay built in 1926	174
7.23	Laxmi Building, Bombay built in 1938	176
7.24	Kent House, Bombay built in 1935	176
7.25	Bank of India, Bombay, built in 1938	176
7.26	Gyani Manzil, Dadar-Matunga, built in 1937	179
7.27	Shreyas, Marine Drive, built in the 1940s	179
7.28	Normandie, Bombay, built in the 1930s	179
7.29	Jeevan Prakash, Pheroze Shah Mehta Road, Bombay, built in the 1950s	182
7.30	Dil Pazir, Bombay, undated	184
8.1	Cover of 'The Modern House in India', published by the Cement Marketing Company of India Ltd, an annual publication, 1942?	205
8.2	Gold Finch, Dadar Matunga Precinct 1937	207
8.3	Empress Court on the Oval (left in 1937, and right in 2016)	209

List of Tables

Table No.	Caption	Page No.
4.1	The several contexts of the Object/ Building	44
4.2	Analysis of Semiotic Square- Cinema and Art Deco	47
4.3	Analysis of Semiotic Square- Art Deco and Bombay	49
4.4	Syntagmatic Analysis of Vertical Discontinuities	57
4.5	Actantial Analysis of the Eros Cinema, Bombay (after Greimas)	61
5.1	Compiling Basic Objects based on available literature	91
5.2	Basic Level Categorization	92
5.3	Basic Objects Identification	95
5.4	Inventory- Cinema Houses	98
5.5	Inventory- Office Buildings	99
5.6	Inventory- Apartment Buildings	100
5.7	Visual Salience and Discontinuities on the Metro Cinema, Bombay	102
5.8	Basic Objects Apartment Buildings	105
5.9	Basic Objects Cinema Houses	109
5.10	Basic Objects Office Buildings	112
6.1	Basic Order Mapping Template	120
6.2	Respondents identification of Basic Objects, based on Mode (79 respondents)	147
7.1	Cinema Houses- Un-weighted and weighted Mapping	172
7.2	Cinema Houses Radar Chart	173
7.3	Office Buildings, weighted and un-weighted mapping	174
7.4	Office Buildings Radar Chart	175
7.5	Apartment Buildings, weighted and un-weighted mapping	177
7.6	Apartment Buildings Radar Chart	178
8.1	Apartment Buildings- Preponderance of Basic Objects	201

Chapter 1 Introduction

‘Art Deco’ in Bombay is an architectural style lodged in the popular imagination of its inhabitants. Over the years, architectural historians have variously tried to describe it within the processes of urbanization of Bombay, and as admired for its wildfire popularity and decorative whimsy. Despite this, the specificity of buildings that should be included in the category of Art Deco in Bombay has always been vague. Conventionally, buildings in Bombay from the 1930s to the 1950s are included in this category. These include cinema houses, office buildings, commercial buildings and residential typologies like apartment blocks, apartment schemes, and bungalows, amongst others.

There are several problems with this catch-all categorization.

The timeframe in question was one of chronological eclecticism (Dalvi, 2000)- where buildings in different styles were being built synchronously, based on the likes and perceptions of its users and designers. This eclectic tendency had been a feature of Bombay's colonial history since the mid 19th century that saw a spill over into the early twentieth. Additionally, industrial progress had also brought modern materials, construction techniques and a modern attitude to all aspects of urban life. Architecture was gaining from these influences, as it was from the easy availability of information from all over the world. The buildings of the 1930s and 1940s displayed a richness of patterns, geometry, ornament and iconography on their facades, along with a diversity of architectural form, occasioned due to these use of modern technology and materials.

Art Deco in Bombay was an architectural style that gained popularity, reached a tipping point in the 1930s, and raged like wildfire for about a decade and a half after, not only in Bombay but all over India. It was then was subsumed into modernism, particularly after Indian independence. It was a style that was adopted and adapted from American Art Deco. From the tiered skyscrapers of New York to the hotels of Miami Beach, American architecture of the period contributed to the language of Art Deco design.

The name itself is a retrospective appellation. It is derived from the 1925 *Exposition Internationale des Arts Decoratifs Industriels et Modernes* held in Paris, which celebrated living in the modern world. During its time, the style known as Art Deco was referred to, amongst other names, as the 'Style Moderne'. In Bombay, a leading practitioner and academic, Claude Batley would refer to merely as '*this New Architecture*' (1935, p. 103). Here, it coincided with the aspirations of the rising middle classes, gained easy acceptability and took firm root in the popular imagination.

At a more quotidian level, Art Deco coincides with a period of large scale building activity, a boom almost, made possible by the reorganization of roads and business districts (especially by the schemes of the City Improvement Trust, discussed in 1.2), by the opening up of the first suburbs that were settled in Bombay north of the mill-lands and as a consequence of the vast

Backbay reclamations in the south. During this time, the first Indian architectural practices developed, first in Bombay and then beyond, and these practices designed a bulk of these buildings all over what was then colonial India.

1.1 Introduction to Art Deco architecture in Bombay (1930-1949)

The 1930's and 40's were a fecund period for domestic architecture in Bombay. The industrial society that was emerging by the turn of the century, with its attendant need for workers and their welfare was obliged to create new building types for mass housing. The socio-fugal high-density chawl as a building type emerged to provide housing to the masses of immigrant labour that moved into Bombay from different parts of the Presidency State.

In the development of Bombay the relationship between the British and Indians was quite unique, unlike that in most other cities. Since the late 19th century, Indian hands wielded Bombay's mercantile strength, and British interests frequently in the same hands often suborned this authority. The expected relationships flip-flopped without causing any undue concern to either side, thus allowing for the breathing (creative) space for Indian architects to operate in.

By this time, the commercial clout of the city, the city's wealth was in the hands of its citizens, rather than its colonial masters. Affluent Indians, the influential elite in Bombay shared a very different relationship with the British as compared to those living in other parts of India. Here the relation was much more that of equals and quite symbiotic in nature. These were the well to do, educated (in the western tradition), upwardly mobile, globetrotting and ocean voyaging cosmopolitan citizens of Bombay, who made wealth and displayed it with ostentation. The most outward trapping of this state was the construction and habitation of a better form of domestic space. Those Indians who could afford to patronized Indian architects to build for them. Some even built to rent out to Englishmen who had settled in Bombay to make lives and careers in the *Urbs Prima*. (Evanson, *An Architectural Hybrid*, 2000, p. 165)

1.2 The City Improvement Trust 1898 and its Influence on Built Form

In 1898, the City Improvement Trust was constituted by an Act after Bombay was ravaged by the bubonic plague in 1896. The Trust was empowered with the task of making new streets, opening out crowded localities, reclaiming land from the sea to provide room for the expansion of the city, and to build sanitary dwellings for the poor and for the police (Evanson, p. 167).

This necessitated a newer type of building, one that was urban, situated, as it were, close to the action of the throbbing organic metropolis. Land being at a premium, despite the emergence of new northern suburbs and the vast schemes that were the result of the City Improvement Trust, meant that the apartment block in a residential precinct became the preferred choice of affluent urban habitation. Domestic architecture in Bombay from the 1920s and 1950s is exemplified by this typology. This extensive activity of housing would be the critical layer superimposed on the palimpsest Bombay that would hold its own within the traces of native settlement and the Dominion architecture within the Fort precinct.

In the 1920's, precincts were formed to offer middle class householders comfortable habitation. A successful scheme among these was the Dadar-Matunga Estate, consisting chiefly of the Parsi and Hindu colonies on either side of Kingsway. In his book 'Boombay: from Precinct to Sprawl' (2014), architect Kamu Iyer surveys the architectural development in Bombay/Mumbai over more than half of the 20th century. Here, he observes that the City Improvement Trust had specific rules that ensured order in the entire precinct as also in all the other schemes developed by it. Buildings could occupy only a third of the site. Setbacks were fixed on all sides, and the buildings had to follow a street line on the front (Iyer, 2014, p. 24). In the Trust areas, 25% of the area consisted of roads and public open spaces, only one-third of the plot area was allowed to be built on and the highest of buildings was restricted to a ground and two upper floors.

Other types of housing prevalent at the time were those made by various community based charitable trusts: schemes such as Cusrow Baug, Rustum Baug, and the Gamadia and Cowasji Jehangir colonies. They provided for the lower middle class at reasonable rents and maintained open spaces and other facilities within the colony.

In addition, the City Improvement Trust also developed schemes within Sion, Parel, Dadar, Matunga, Mohammed Ali Road, Byculla, Nagpada, Princess Street, Sandhurst Road, the Backbay, the Princess Dock, Elphinstone Road and Colaba. Buildings in these precincts displayed the extensive use of Art Deco or (as it was known at the time: the *Style Moderne*) as the preferred choice of building design. This gave Bombay its cosmopolitan image of urbanity that we associate with it even today. It developed humane precincts and urban stretches that form part of the unique heritage of Bombay's recent past.

1.3 Art Deco- the Development of a Style

As mentioned earlier, Art Deco was derived from the 1925 Exposition Internationale des Arts Decoratifs Industriels et Modernes held in Paris. This grew as an eclectic design style, in the period between the two World Wars, and was referred to as *Style Moderne*.

The Art Deco era was one of contradictions. Through the Roaring Twenties and the Great Depression of the 1930s, the style infused the everyday world with elegance and cool sophistication. During this period, singers and songwriters entertained audiences through the new medium of radio, and cinema, epitomized by Hollywood musicals offered the hope of better times, or at least a temporary escape from daily troubles. Travel was in the news with ocean liners racing the Atlantic and trains crossing continents, as speed became a metaphor for modern times. Technology and design would synthesize into various forms of production from jewelry, fashion, furniture, domestic products to architecture.

Art Deco designs emphasized geometry and simplicity, often combined with vibrant colors and simple shapes that celebrated the rise of commerce and technology. From luxurious objects made from exotic materials to mass-produced, streamlined items were made available to a growing middle class. In architecture America took the lead, with iconic buildings in New York, seafront developments in Miami and cinema theatres country-wide. The architecture of the period contributed to the language of Art Deco design and vice-versa. While New York's Art Deco skyscrapers represented the technology and financial power that created them, the buildings of

Miami's Art Deco districts, on the other hand, reflected the Hollywood style, with their striking facades and colors.

1.4 The Proliferation of Art Deco Architecture in Bombay and the Rest of India

Domestic architecture in Bombay took up contemporary urbanity as its *raison-d'être*.

Interestingly developments of the time took place outside the Imperial gaze. Independence was more than two decades in the future. The architecture from the early thirties onwards would be dominated by the practices of the first generation of Indian architects building commercial and residential architecture all over Bombay. The large amount of buildings that came up in these two decades would actually define Bombay's urban form, as well as usher in an architecture of modernity.

Bombay's architects in the decades before independence were educated in the western tradition, some in the west (mostly from the Sir JJ School of Art Bombay, while some acquired Associateship of the Royal Institute of British Architects- ARIBA being the preferred qualification) and were as forward-looking and eclectic as their clients. They appreciated the newer technologies and building methods that were in the developed world and sought to put them to use in their architecture, which was meant to be no lesser than that happening in Europe or America.

Architects in Bombay were also aware of much of the influential literature that would later be accepted as Modernist canons or doctrines. They believed in Modernism's essential agenda and sought to demonstrate it in their own work, that of transforming the port city into a world city. In 1942, Mistri and Billimoria, writing in the Journal of the Indian Institute of Architects (JIIA) proposed a future architecture for the city that echoed the rational theory emerging through the writings of Le Corbusier and other European modernists:

"It is not enough that our architects are free from the vanity of 'styles'. They must learn to exploit and apply the fruits of scientific research in their day-to-day problems... Our sense of values must be based on rational thought and should not be swayed by any vain pursuit and misconception of qualities such as individuality and originality... The building is a machine to live, work or play in... Architecture has changed from the art of two-dimensional pattern making to the science of

the relation of space and movement... Orderliness is the beginning of everything." (Mistri & Billimoria, 1942, p. 216).

Writing in professional Journals like that of the IIA mentioned earlier, and other industry publications as well as books aimed at the layperson also influenced the proliferation of this kind of architecture. R. S. Deshpande, an engineer in the 1930's presented through several books a common sense layman's guide to residential planning and construction, including numerous modern house designs. In his later books he specially espoused the International style, for; to copy productions of historical periods is not to maintain traditions of those periods at all. They were suitable for those times only (Evanson, *The Indian Metropolis*, 1989).

Popular publications and promotional literature by cement companies popularized modern designs, especially in residential buildings. The Cement Marketing Company of India; distributors of A.C.C. and Dalmiya cements, published annual catalogues entitled '*The Modern House in India*' that extensively displayed photo-images of currently built architecture (using the said cements) all over the country. The examples of buildings from the 30's and 40 show the popularity of the new form of building and the extensive spread of the new technology. A single year's collection had several examples of domestic and commercial architecture from Bombay, Poona, Ahmedabad, Surat Morvi, Udaipur, Indore, Hyderabad, Secundrabad, Tuticorin, Bangalore, Lahore, Patna, Calcutta, Darjeeling, Kalimpong, Assam, New Delhi, Kanpur, Aligarh, Karachi, Madras, Coimbatore, Aleppy, amongst others (The Cement Marketing Company of India Limited (Publicity Department), 1942?). Art Deco architecture became the standard for domestic architecture, whether bungalows or apartment blocks.

There is little doubt that these publications went a long way in making architecture firms like Gregson, Batley and King; Master, Sathe and Bhuta; Merwanji, Bana and Co.; G. B. Mhatre; Doctor Mhatre & Desai and building contractors such as Gannon Dunkerley & Co.; Shapoorji Pallonji & Co. and Motichand & Co. famous all over the country. These publications of the Concrete Association of India (that had branches all over the country) attempted to popularize the use of concrete by describing it as a versatile material, "*a valuable asset to the war building programme which demands conservation of critical materials* (1942?, p. 5). Technology ruled the architectural aesthetic of the Indian architects, in essence developing an architecture that had

more claims to universality than the eclectic choice making or revivalism that went on before. Technology liberated the architecture. Social change was reflected, as well as brought about by architecture as well as urban design.

1.5 Inspiration for this Research

The city of Bombay has been blessed with eclectic forms of architecture from its very inception. From the pre-colonial vernacular buildings, to the remnants of forts and churches of the Portuguese, to the many forms of imperial architecture under the British who favoured the Neo-Classical, Neo-Gothic and the Indo-Saracenic at various times, to the non-imperial architecture under the last decades of colonial rule- the Art Deco and the early Modernist expressions by Indian educated architects, the city has had these kaleidoscopic forms exist cheek by jowl with one another.

In the 21st century with its predominantly capitalist and globalised preoccupations, urban interventions have disregarded these variations to favour a more homogenised form of architecture based on real estate preoccupations rather than aesthetic values. In the recent years this has meant a move away from the imperatives of preserving memory through sensitive conservation, and the appreciation of precincts where a certain form of architectural expression predominates has been ignored completely. This has meant that a large portion of the erstwhile city is transforming rapidly and several of the buildings that formed the fabric of the city are being lost to redevelopment.

The one form of architectural expression that has always defined the city since the early decades of the 20th century is Bombay's Art Deco architecture. It was, as has been mentioned earlier, overwhelmingly popular during its peak decades and built in several forms from residential, to commercial to recreational buildings, as well as had several precincts defined by its characteristics. The Art Deco era marked a highpoint of optimism in the rise of a port city filled with the emerging educated, self-aware and progressive middle class. These buildings are important as they delineate an architecture that was not mandated by the colonial rulers but the outcome of self determined choice making of both architects and their local patrons. These are

buildings that have been in continuous use since their inception. Bombay has been known to have more Art Deco buildings in any city in the world except for, perhaps, Miami.

This has itself become a cause for its decline. Today most of these buildings are over eighty years old, in private ownership, and tenanted in most cases. They have suffered the ravages of time and the additions and alterations that are inevitable with city living over three-fourths of a century. They are also too many and too spread out to be catalogued for preservation, and legislated under heritage laws. New development control rules have made it easy for these buildings to be demolished to make way for newer high-rises. Not only that, a general lack of understanding of the facades of these buildings that allows for the identification of Art Deco has meant that, under the guise of refurbishment, the building has been completely stripped of its surface ornament. This can be seen on certain buildings in the iconic Marine Drive precinct as well.

The inspiration for this research is to offer tools for identification of Art Deco buildings that may be identified as a collective worthy of preservation. Despite their being used to promote the idea of Bombay to UNESCO as a world heritage city, there is no composite plan in Bombay to look at Art Deco buildings with the same favour that is bestowed upon the earlier Imperial buildings.

The central problem has been the definition of what is Art Deco. There are buildings that exhibit a great variety of forms that vary from the easily identifiable ornamented Style Moderne, to the relatively purist Streamline Moderne, to the early stripped Modernism (as seen in the 1950s) all of which has been clubbed together as Art Deco. Since, other than historical, there has not been any research to look at these buildings for their own sake; our research is motivated towards making a case for their appreciation and reservation through semiotic analysis.

1.6 Motivation for this Research

Our involvement with the study and appreciation of Art Deco architecture in Bombay began with researching the work of G. B. Mhatre, who was an important architect of the 1930s and 1940s. His work is spread over a variety of styles, but his Art Deco buildings are the most significant.

This research was published in a monograph called 'Buildings that shaped Bombay: Works of G B Mhatre, FRIBA 1902-1973 (2000), edited by Kamu Iyer. In an chapter for the same book ('Domestic Deco' Architecture in Bombay: G. B.'s Milieu, 2000), I placed Mhatre's work in the context of his own time, demonstrating how Bombay's architecture of the 1930s was a precursor to Modernism, to which practitioners in Bombay unselfconsciously made the transition to, in the period after independence.

Later, in 2000, for a dissertation (unpublished) submitted for a Post Graduate Diploma in Indian Aesthetics to the Department of Philosophy, University of Mumbai ('Lesser Architecture in Bombay' in the 1930's & 1940's: Aesthetic Assertion in an Age of Chronological Eclecticism, 2000), I critically analysed the non-monumental, non-imperial, non-civic architecture built in Bombay in the period from between the two world wars to Indian independence. I studied the domestic/residential architecture that came up in the city and the suburbs during that time. It was this architecture, which in retrospect was called 'Art Deco' and can be said to define Bombay's urban character as it is known and well regarded today. In an essay for ART India based in part on my dissertation (The 'Lesser' Architecture of Bombay, 2004), I related this architecture as a phenomenon of practice of the architects of Bombay and asserted that the choices they made could be seen as a form of resistance to the colonizing influence that was taking its last gasps at the time.

In a paper read at the international conference in Mumbai organised by the K. R. Cama Oriental Institute entitled 'Architecture as Social History: Reflections on Bombay/Mumbai' ('This New Architecture': Contemporary Voices in Bombay's Architectural Development in the 1930s, 2010), we traced the development of the architecture of the 1930s through contemporary voices using writings from their own time, bringing out contemporary and contradictory voices even as the city was undergoing rapid urban change.

In all these cases, the focus was on contextualisation and a chronological historicity. While useful, this did not address buildings themselves as text. My motivation in this research is to take this alternate path of analysing the buildings *ahistorically*, so that even in present times Art Deco buildings can be clearly identified and appreciated.

1.7 Area of Focus

In our research we seek to find qualities that allow us to derive a semiotic of architecture from the objects/buildings themselves. We ask if they can be identified by means other than their appropriation within diachronous (historic) processes. Art Deco buildings in Bombay have rarely been looked at from anything other a historical lens. Can the buildings themselves be analysed as texts/objects, for themselves, outside of their chorological contextualization?

We believe there is a value for this kind of *object analysis*, of a visual investigation of Art Deco architectural facades in Bombay, as “inferences can be made from their particular spatial contexts” (Emmison & Smith, p. 109).

“Objects provide non-reactive and (often) unobtrusive measures un-confounded by the respondents’ behaviour. Objects and traces are very often easy to quantify and classify, making comparative sociology and rigorous research design easy to conduct. Objects are all around us and provide a free source of data for the visual investigator... (Emmison & Smith, 2004, pp. 148-149)”.

It is understood, nevertheless, that there are limitations to object analysis.

This first is the selective availability of materials. The objects being examined, as mentioned earlier, are built up to eighty years in the past, have been in constant use since then, have been added too and taken away from, and subject to the wear and tear of everyday life. Art Deco apartments, for example, have almost always had a floor or two added to them, sometimes seriously obscuring the architectural schema of their facades. Many useful examples would have been demolished over this long period of time.

As researchers, we are keenly aware of a possibility of disjunction between the one’s own understandings or interpretation of an object and that of the user/designer.

Finally, the visual data in question are relics of the past. It is not always clear to what extent this provides an accurate picture about the present (Emmison & Smith, pp. 149-150). Nevertheless, it

is the aim of this semiotic research to read buildings as texts that can allow Art Deco buildings in Bombay to be identified.

1.8 Aim of the Research

The aim of the research is to develop a semiotic for Bombay's buildings of the 1930s and the 1940s, to gain a deeper and more nuanced understanding of the buildings of that period, extracting semiotic meaning from the buildings regarded as texts in order to complement and take forward current historical research on the subject.

1.9 Objectives of the Research

1. To seek out the appropriate tools of semiotic analysis in order to investigate buildings as objects.
2. To analyse (using semiotic tools) the intra-objectual relations within an object in terms of description and signification.
3. To place the object in the context of its inter-objectual relations with other 'like' objects in the world.
4. To identify an 'exemplar' that can metonymously represent all the other members in that category, and locate it contextually within a larger semiotic space.
5. To discern a 'bundle of relations' that the object possesses, so that these can be used as for comparison with other objects to find (self) similar inherencies.
6. To create a body of graded membership, in order to identify objects that are closest to having the 'bundle of relations' that the central object does.

1.10 Research Assumptions

Despite the variations, members of the category 'Art Deco' may be related to one another without all the members having any properties in common that define the category 'Art Deco'. Some members of that category 'Art Deco' may be 'better examples' of that category than others, as based on an identified 'basic objects' that collectively form a bundle of features'.

1.11 Chapterization- Organization of the Thesis

In the search for ‘Buildings as Text’ we look at our subject through three ‘ways of seeing’:

1. Contextualization
2. De-contextualization
3. Re-contextualization

1.11.1 Contextualization

First, we place the buildings under study into their own context, specifically as cultural products of their time. While the passage of time has both normalized and ‘canonized’ their presence as well as their current readings, it must be recognized that canons (In this case Bombay’s Art Deco buildings) are the consolidation of ideas and production that are processes of predetermined choices built by accretion. The first two chapters in the research are intended to ‘contextualise’ the buildings, and to appreciate the ‘conventional meanings’ attributed to them.

Chapter 1: Introduction

The first chapter (as has been seen) explains the significance of Bombay’s architecture in the period between 1930 and 1949, and its locational and chronological importance in the history and development of architecture in Bombay and India. The buildings of the time are placed in the context of socio-economic and technological changes, and the development of architectural practice at that time is especially highlighted. The immediate and widespread popularity of this form of building is observed to be the result of being embraced by the public at large as an architecture they could call their own. The collective appreciation of these buildings ties in with a certain optimism seen in the penultimate decades before Indian independence and can be appreciated as a minor social revolution, in anticipation of the imminent nation state. It is for this reason that, to develop a semiotic for the buildings of this period, the gaze and the method of analysis has to be through synchronous readings. This chapter also lays out the essential focus of the research through clearly articulated aims and objectives that will be addressed in the course of this thesis. The research methodology is presented through three ‘ways of seeing’ and a brief summary of the chapters to follow.

Chapter 2: Review of Literature

This chapter presents a detailed review of the available literature on the architecture of the period. The writings of that time, its place in the theoretical discourse of architectural development and visual style are discussed. Architectural research on the subject is analysed for relevance in a semiotic context. A critical evaluation of the current literature is made for its significance in the understanding of the architecture under study as well as lacunae in the present writings are highlighted. The literature on the semiotics of object analysis is discussed as a series of base texts to provide the arguments to anchor the study and delimit its scope. The literature under consideration is summarised and its significances discussed within the context of the research focus. A statement of how the analysis of existing literature, theoretical writings and critical readings has led to the framing of research questions is made. The Research Questions for this thesis are presented. This allows for the clear establishment of gaps in the literature available with an aim to gain valuable results in terms of semiotic meanings and readings of architecture.

1.11.2 De-contextualization

The aim of the research is to study buildings as texts. Using a definition from literary theory, a text may be any object with a readable set of signs transmitting an informative message that gives out meaning (Lotman, 1977). It is our endeavour to extract semiotic meaning from the buildings' facades that we regard as texts in order to complement and take forward current historical research on the subject. The intended hypothesis is that a semiotic may be developed from this study that will yield meaning and insight into the objects themselves. The architecture of the time needs to be freed from retrospective generalization.

Thus the second 'way of seeing' is through a process of 'de-contextualizing', using semiotic methods to deconstruct or destabilize accepted meanings and notions. These processes form Chapters 3 to 8. In Chapter 3, we attempt to develop theory of objects by describing various semiotic tools used to study the text, deconstructing the buildings under study as 'actants' that have intra and inter objectual relations, developing an exemplar and recasting the buildings in

terms of graded memberships. These methods shall permit deeper readings of texts themselves to look for traces of the alternate ways of seeing the conventional canons.

Chapter 3: Research Design (Methodologies developed and adopted)

The methodology for creating a semiotic is in the form of tools that used to generate and record data based on the theoretical underpinnings described above. These may be summarised as:

1. Identifying semiotic signifiers/attributes from the Object/text using intra-objectual and inter-objectual relationships
2. Using Inventories for a semiotic breakdown for the presence or absence of these attributes (salience, function and isotopy), leading to the identification of exemplars.
3. Using the exemplars to identify Basic Objects in buildings of the inventory so as to create a graded map of ‘family resemblances’, in which all the members of the inventory shall be graded for proximity to the exemplar.

Chapter 4: Buildings as text: Identifying semiotic signifiers/attributes from the Object/text using intra-objectual and inter-objectual relationships

For the building to be studied as a text, we consider it to be an object/body with imperative, and examined for semiotic significance using the tools set out by Alvise Mattozzi in his paper ‘A Model for the Semiotic Analysis of Objects (2007)’. Mattozzi assumes that an Object is a body; an object is an intersecting point in a network of relations; the object itself takes part in these relations and that other actors (objects) interact with it. This sets up a working chain of saliences, functionalities and narrative discontinuities. For the purposes of study these relationships are identified as occurring between formants (and sub-formants) that can be identified and isolated, and later put together to derive meaning from their inter-objectual and intra-objectual relationships.

We identify a set of formants for the buildings to be inventoried for the presence/ absence of several ‘Basic Objects’. It is these Basic Objects that collectively form the buildings’ façade. This hypothetical building facade is considered an ‘exemplar’ (see next chapter) for the purposes of research. Every building is measured against these collectively for the semiotic resource that shall be used for further analysis.

Chapter 5: Identifying Art Deco Exemplars

The buildings of Bombay (and outside Bombay, selectively) constructed during the period (1930-1949) are our semiotic resource. The inventories used in the earlier chapter consist of examples of residential, commercial and recreational architecture, united by social imperatives and design traits.

Eleanor Rosch speaks of conceptual processes that work, not with precision of categorisation, but with a fuzzier strategy of placing similar objects together based on an example that fits that category the best. The judged ‘best’ examples of conceptual categories are called *prototypes*, that, far from being abstractions of a few defining attributes, seem to be rich, imagistic, sensory, full-bodied mental events that serve as reference points in all of the kinds of research effects (Rosch, 1999). These categories tend to be at a level of specificity intermediate between global inclusiveness and perceptual particularity. Rosch describes these best examples as ‘*exemplars*’, which are culturally salient objects, people, or events. Exemplars typify experiences by representing a best case or ideal version and become the model against which other similar experiences are matched. *Object exemplars* are often the basis on which people classify objects (Shore, 1996, p. 64). The set of research tools chosen for this semiotic/semantic analysis is used to observe and analyse the signification of *objects*. These properties are then to be used to generate an ‘exemplar’.

Chapter 6: Creating a graded map of ‘family resemblances’: A semiotic mapping of Bombay’s architecture (1920-48)

In this chapter, the outcome of the methodological practices of Basic Object Mapping that were set out in the Research Design is presented. The mapping was the result of the identification of Basic Objects that were derived from the statement of an exemplar in Chapter 5. Here, the Basic Objects were derived, and stratified into 3 categories- formants, discontinuities and superimpositions that allowed for the identification, reading and nuanced appreciation of the facades under study. Our methodological pursuit leads us to mapping Basic Objects on all the Cinema Houses, Office Buildings and Apartment Buildings in our inventory. This is carried out, first, as an identification of presence/absence of the elements on the facades (un-weighted).

The same exercise is carried out after giving weighted scores to the presence/absence of Basic Objects. The weights are derived from a Perceptual Survey carried out with respondents who were aware of Art Deco architecture, and who are shown the Basic Objects for their perception on which of them represented Art Deco architecture best. Based on their responses the weights are derived and assigned to each of the Basic Objects. This allows for two readings of all the facades in the inventory (weighted and un-weighted) that can be compared for correlation and deviation. In both cases it is possible to chart which of the buildings under study came closest to the exemplar and which were furthest away from it. In the next Chapter (7), we discuss the findings for their correlations as well as their semantic functions.

Chapter 7: Results and Discussion

The results of the study based on the tools deployed in the previous three chapters are collated and presented here. The findings are discussed for their implications within the methodologies applied only. Limitations and flaws in the use of the methods are pointed out.

1.11.3 Re-contextualization

We study the buildings as objects in themselves. We seek signification in order to develop a semiotic of the buildings of Bombay from 1930-1949. The processes, methods and tools adopted to attempt this examine and analyze synchronously and (largely) from an *ahistoric* standpoint. In our third ‘way of seeing’, the findings and analysis thereafter shall be re-contextualised in the historical discourse and conclusions drawn from this. New light is shed on the practice of architecture of the time as a discourse of social production and consumption.

Chapter 8: Conclusions

This chapter is a detailed discussion, interpretation and evaluation of the results with reference to the literature and the rationale of analytical concepts set forth in Chapters 2 and 3. The findings from chapter 7 shall be put into the context of the literature presented in the survey and analysed for congruence or divergence. We answer the research question: ‘What is the content of the

message transmitted by the facades of the buildings of Bombay of the period?’ Specifically, prevalent notions of referring to the buildings on Bombay of this time as Art Deco are analysed for veracity. The relevance of ‘style’ as a consideration in the production of architectural facades is discussed. This chapter summarises the intent and direction of research, the questions raised, the methods adopted, the findings, and the analysis.

The main intent of this PhD research was to critically examine the language of Bombay’s architecture from the 1930s to the 1950s to gain semiotic understanding about its aesthetic and its form through its facades. As is presented in the literature survey that follows in Chapter 2, current research is largely historical. Such approaches regard all the buildings of time as more or less built out of the same common motivating factors.

This creates a lacuna of critical analysis of architecture as visual communicators, observable in a diversity of building types in Bombay (and India) at the time. What has not been analysed so far is the nature and cause of this variety. This PhD thesis attempts to occupy this space. The following research question is addressed: “Can semiotic readings of the buildings of Bombay between 1930 and 1949 fill the gaps in the discourse of the development of Bombay’s/India’s architecture?” The need for locating the conclusions of this research in the larger context of architectural discourse is felt. Practical implications for future users/ researchers are spelt out. The possibility of generalising both methods and findings into the examination of other forms of architecture/object/texts/ is discussed.

Chapter 2 Review of Literature

2.0 Introduction

The motivation for this research was to observe Bombay's Art Deco facades as texts, seen as objects themselves. In order to do this we displaced the facades from their moorings to chronological placeholders that is the prevalent discourse. Shorn of their historical context, the intention was to find a means of appreciating the buildings through their communicative or narrative schema, and the possibility of identifying and laying out the schema for analysis, and to generate new knowledge on the subject.

In our own research and publications carried out prior to this doctoral research, we have, like many other researchers and writers on Art Deco architecture in Bombay, attempted various ways of contextualizing the ‘style’ in the larger processes of the city’s history, and indeed that of the nation. While that makes Art Deco in Bombay part of a larger story of the development of the metropolis in the penultimate decades before Indian independence, it does not explicate the buildings themselves. In a sense, it records, but does not account for their popularity and fecundity in the short time period that defined their era. We hypothesize that this will be possible by a semiotic account of their facades as speaking texts that we intend to read and analyze.

In our review of literature, we ‘Contextualise’ the available knowledge of Art Deco architecture (both generally and specifically) as part of the three ‘ways of seeing’ in the Introduction. As we take a critical look at the available literature, we are able to locate our domain of Art Deco architecture in Bombay (1930-1949) both stylistically and chronologically. This chapter covers the available knowledge about our subject, analyses the gaps in the current discourse and presents Research Questions that shall be addressed in the course of this thesis.

The review of the available literature on the subject focuses on Art Deco architecture, internationally as well as in India, where we observe both contemporary and retrospective accounts on the subject. In this regard, we highlight both descriptive as well as critical readings on the architecture of the period under consideration. As mentioned earlier, a large part of the literature observes Art Deco architecture historically and locates it chronologically.

As our study (and analysis) is semiotic in nature we make a critical assessment of semiotical processes and analytical techniques, discussing semiotic tools and their relevance to assessing built form as text in order to derive meaning. Here, we look at the work done by semioticians and researchers in the Perceptual domain for their theoretical processes relating to our research. Our objective is to define the direction that our research will take by developing a research design that will we conduct to read buildings as text.

2.1 On Art Deco, internationally

In 1968, the historian Bevis Hillier published 'Art Deco of the 20s and 30s', which may be called the first canonical text on the subject. In this book, Hillier popularised the term 'Art Deco' (p. 12). The term has gained credence and popularity ever since. 'Art Deco' is therefore a retrospective appellation. Hillier himself describes how the term had come into common usage in art circles and the popular press just a few years prior to his book. However, his definition has been considered too broad based by some authors for the period encompassing the first three decades of the 20th century. Michel Windover finds Hillier's definition 'overarching' and too broad to account for the stylistic variances to distinguish between Moderne, Stripped Classicism, Modernistic, Depression Moderne, Streamlined Moderne, etc. (2009, p. 6) In his later work 'Art Deco Style' (1997) Hillier with co-author Stephen Escritt would return to his notion of a 'Total Style' suggesting the wide range and deep saturation of the style as it transcended geographical, class and medium boundaries (Windover M. J., p. 8). Here, Hillier and Escritt examined the larger scope of Art Deco internationally, from typography, product design to the creation of skyscrapers.

Another significant survey of art, architecture interior design, film sets, photography, furniture, jewellery, glass and ceramic in the interwar years is by Eva Weber (Art Deco, 1989). Weber discusses the influence of the Bauhaus, Neoclassicism, Futurism and other artistic movements. Weber classifies the Art Deco phenomenon into constituent styles, like zigzag deco (or the skyscraper style), Streamline style or Tropical Deco; however her focus is limited to the United States and Europe (Weber, pp. 20-56). 'Art Deco 1910-1939' edited by Benton, Benton and Wood (2010) is the most comprehensive book on the subject and on the period in terms of cultural and aesthetic production. It is a catalogue of the large exhibition of Art Deco organised by the Victoria and Albert Museum London in 2003. Bringing together articles from leading experts in the field, it discusses the sources, various forms of expression, the distinct visual language and the global spread of Art Deco. The editors bracket the timeframe of the style, as starting from the 'Roaring 20s' and ending with the Great Depression. While this definition does seem to be America-centric, the coverage of Art Deco internationally accepts the prolificity of the style beyond these dates. Calling it more a taste than a style, the editors also hold this responsible for the slippery way it resists theoretical categorization (Benton, Benton, & Wood,

2010, p. 14). In addition, books by Patricia Bayer (*Art Deco Architecture: Design, Decoration and Detail from the Twenties and Thirties*, 1992) and Klein, MacClelland and Haslam (*In the Deco Style*, 1987) are also broad surveys of the subject.

Art Deco, as a 'style' encompassed several art-forms apart from architecture to include interior, product, fashion and graphic design. Stuart Durant in his survey 'Ornament: a Survey of Decorations since 1830' (1986) devotes a chapter to the development of the style (pp. 239-263). Durant traces the evolution of ornament on various media from the Art Nouveau that precedes this stage, the creative surge following the seminal exhibition in Paris in 1925 and the uses of 'exotic' influences until its eclipse due to the rise of Modernism, which 'despised decoration' (p. 242). Laura Crewinske's survey of the architecture of Miami (*Tropical Deco: The Architecture and Design of Old Miami Beach*, 1981) is a significant reference work as it allows for a comparison with the domestic architecture in Mumbai, especially the apartment block which was an emerging building type at that period. Ingrid Cranfield's source book 'Art Deco House Style' (2004) breaks down the different elements of buildings that came to be built in the 1920s and 1930s and interprets them stylistically from the interior and exterior. In focusing on the plan and the facade of these buildings she brings out the influence of social regulations and the use of new materials coming to serve the burgeoning influence of Modernism in the design of Houses. Her survey is restricted to the development of Art Deco in Britain.

Heller and Fili's (2006) survey of graphic design and typefaces provides an alternative take on the rise of Art Deco as an almost 'official language' through the brief to the participants of the 1925 Paris *Exposition Internationale des Arts Decoratifs et Industriels Modernes* which consciously eschewed historical models and allowed only 'works of "modern" or unprecedented character' (p. 30). This made the designers turn to a variety of resources from Futurism, Constructivism, the Bauhaus and Purism to the more exotic allusions to Maya, Egyptian and Babylonian antiquity. They go on to describe the popularity of typeface design in the 1920s and 1930s and the demand for newer fonts to be made available for use in a variety of media from advertising to buildings. Lakshmi Bhaskaran's source book on 20th century design 'Designs of the Times' (2007) delineates terms like 'Art Deco', 'Style Moderne' and 'Streamlining' that have variously been considered synonymous for architecture during the period under study.

2.2 On Indian Architecture during 1930-1949

Several authors on Art Deco in India have attempted to anoint the Indian production as a 'style' by itself, coining several terms for it, including 'Indo-Deco' and 'Bombay Deco', among others. Amin Jaffer (2010) in his chapter 'Indo Deco' in 'Art Deco 1910-1939' by Benton, Benton and Wood describes how India in the 1920s and 1930s embraced modern design tendencies with enthusiasm, despite being socially conservative and economically backward. Indians were highly receptive to foreign visual and artistic influences. The epicentre of Art Deco was Bombay, where primarily due to the reclamation projects of the time, and the strict regulations laid down concerning materials, style and appearance, a coherent Art Deco cityscape (comparable to Miami's South Beach) was possible (pp. 382-383). In their survey of the Bungalow as a building type, Desai, Desai and Lang (2012) chart its development in twentieth century India, and make connections from its various manifestations in different parts of the country in terms of its form and response to environment and culture. During the 30s and 40s the symbolic exuberance of the Art Deco period transposed itself on the bungalows at that time giving rise to some striking examples of domestic homes (p. 134).

2.3 On Bombay's architecture during 1930-1949

In contemporary research on Bombay's architecture of the 1930s to the 1950s, one of the earliest surveys is by Malay Chatterjee (*The Evolution of Contemporary Indian Architecture*, 1985) who describes the Art Deco architecture in Bombay as 'backward looking' and displaying a 'continuing satisfaction and contentment with a tried and tested vocabulary (p. 126)'. This view is endorsed by Lang, Desai & Desai in their work on the architecture after Independence (*Architecture and Independence, the Search for Identity: India, 1880-1980*, 1997). Lang, in his own survey of *Modern Architecture in India* (2010), first published in 2002, analyses the developments from the founding of the Indian Institute of Architects during the 1920s to the current day. He examines the early influences on Indian architecture of movements like the Bauhaus and the influential individuals of the day. Describing Bombay as the heart of Architectural thinking in India during the period between the two World Wars (p. 8), he elaborates on the development of Modernist architecture in India, specifically the adoption of 'Streamline Moderne' and its visual characteristics. Norma Evanson, in 'The Indian Metropolis'

(1989) presents a more optimistic version of 'Art Deco' in Bombay as a vision of the future rather than of the past. Sharada Dwivedi and Rahul Mehrotra's 'Bombay: the Cities Within' (2002) has now taken on a 'canonical' position within writings on the history of architecture in Bombay. In their work the period of the 30s and 40s is contextualised within the rise of the city and the urban development that was prevalent at the time. Their later book, 'Bombay Deco' (2008) retreads much of the ground from their previous work, although is a visual resource of images from several of the buildings of that period. In an intervention in the same book, Kamu Iyer (2008) presents a nostalgic and personal take on the development buildings in the City Improvement Trust areas of Bombay (specifically the Hindu and Parsi Colonies in Wadala) and their consistent and functional response to the need of the time.

Jon Alff in his essay 'Temples of Light: Bombay's Art Deco Cinema and the Birth of the Modern Myth' (1997) describes the influence of Hollywood styles on 'Art Deco' Cinema Houses in Bombay affirming Bombay's obsession with the movies. In 'Bollywood Showplaces: Cinema Theatres in India' Vinnels and Skelly (2002) catalogue the various different cinema theatres in the country, attesting to their widespread popularity and their equally varied forms. Navin Ramani's book (Bombay Art Deco: A Visual Journey (1930-1953), 2007) is a visual (photographic) showcase of Bombay's Art Deco buildings, the ornament that covers them and their details and patterns. Mariam Dossal (Theatre of Conflict, City of Hope: Mumbai, 1600 to Present Times, 2010) makes a widespread survey of the development of Bombay as seen through the use and ownership of land. In her chapter on the period under study, she highlights the work of Claude Batley and his description of the architecture of the time as 'nationalist' a phrase that would gain currency as architects sought 'a special architectural sensibility and aesthetics which would match and give concrete expression to political freedom' (2010, p. 184). Avani Parikh's essay (The Architectures of Postmodernism, 1997) deals with the issue of appropriating meaning as a form of post colonial struggle.

Kamu Iyer's monograph (Buildings that shaped Bombay: Works of G. B. Mhatre, FRIBA (1902-1973), 2000) is perhaps the only contemporary monograph that looks at specific buildings in some detail, although this is restricted only to the work of architect G. B. Mhatre. In an essay for the same book ('Domestic Deco' Architecture in Bombay: G. B.'s Milieu, 2000), Mustansir Dalvi

has put Mhatre's work in his own time, demonstrating how Bombay's architecture of the 30s was a precursor to Modernism, to which practitioners in Bombay unselfconsciously made the transition to, in the period after independence. In an unpublished dissertation ('Lesser Architecture in Bombay' in the 1930's & 1940's: Aesthetic Assertion in an Age of Chronological Eclecticism, 2000), Mustansir Dalvi has critically analysed the non-monumental, non-imperial, non-civic architecture built in Bombay in the period from between the two world wars to Indian independence. His dissertation covers the domestic/residential architecture that came up in the city and the suburbs during that time. It was this architecture, which in retrospect was called 'Art Deco' and can be said to define Bombay's urban character as it is known and well regarded today. In an essay for ART India, based in part on his dissertation, (The 'Lesser' Architecture of Bombay, 2004), he related this architecture as a phenomenon of practice of the architects of Bombay and asserted that the choices they made could be seen as a form of resistance to the colonizing influence that was taking its last gasps at the time. In his paper presented at an international conference in Mumbai organised by the K. R. Cama Oriental Institute ('This New Architecture': Contemporary Voices in Bombay's Architectural Development in the 1930s, 2010), he traces the development of the architecture of the 30s through contemporary writings from their own time, bringing out contemporary and contradictory voices even as the city was undergoing rapid urban change.

2.4 On Relevant Literature published in Bombay during 1930-1949

There is a fairly large resource of written material on architecture that is contemporary to the period under study. Architectural practices at the time were designing in Bombay with great prolificacy, thanks to urban development projects and reclaimed spaces made available by the City Improvement Trust. Bombay's architects also designed buildings of great variety all over the country. At the same time, they published their work, wrote, reviewed and commented about contemporary trends in the *Journal of the Indian Institute of Architects*, which could be considered the mouthpiece of the architects of that period. Claude Batley, principal of the architectural firm Gregson, Batley and King, and Professor of Architecture at the Sir JJ School of Art, Bombay (1923-43) was the most prolific of commentators on the architecture of Bombay. He was also president of the Indian Institute of Architects and editor of the institute's journal.

In a lecture at the IIA on October 4th 1934, Batley spoke of emerging trends, of what he described as ‘This New Architecture’ as a return to primary essentials. ‘This New Architecture is,’ according to Batley ‘in one sense the *nudist movement* in our profession (Batley, 1935, p. 103).’ In his speech he was unabashedly critical of the revivalist and neo-Classical stylistics that were the hallmark of the architecture of officialdom until this time. Among the texts written at the time, Batley’s pamphlet on Architecture is the more analytical, taking a broader view on the building processes and concerns in the country at large (Batley, Architecture, 1946). In addition, Batley’s writings in the JIA, particularly (Batley, "Bombay Looks Ahead", 1934), and (Batley, Presidential Address for the Session 1935-36, 1935), talk about contemporary trends in architecture in the mid 1930, a time when Art Deco architecture in Bombay, was just gaining momentum. Mistri and Billimoria, in a comprehensive article in the JIA, look back at the Architectural Development in Bombay in the previous quarter century, from 1917-1942 (Mistri & Billimoria, 1942) and provide a bridge from the revivalist buildings to the more modernist explorations in the city.

The Modernist viewpoint is reinforced by R. S. Deshpande in his book ‘The Modern Ideal Home’, first published in 1939. This book is a manual for building in the new manner, written with those who did not have access to contemporary architects. For Deshpande, ‘a good house must exactly suit the family, just as clothes to the wearer (Deshpande, 1948, p. 4).’ He has little value for ‘external embellishment’ and feels that ‘overflowing elaborate architectural features contribute very little towards making a house comfortable.’ In an attempt to define ‘Modern Architecture’, Deshpande claims that it has no characteristics of its own beyond being simple and in harmony with modern ways of thinking and modern ideas of hygiene, an architecture rationally related to the circumstances of modern life. ‘No architect of the first rank now practises pure functionalism. One good thing however, came out of this movement, viz., that it emancipated the architect from stylism (p. 69).’ Deshpande also wrote another book on domestic architecture in India (Deshpande, Cheap & Healthy homes for the Middle Classes of India, 1935). However his work is more in the nature of popular texts promoting the use of the new building materials and construction with a modern house planning outlook.

In the annual brochures of the cements companies in India, the architecture of the time is showcased with an aim of selling cement products. These brochures, such as (The Associated Cement Companies Limited, 1937), (The Cement Marketing Company of India Limited (Publicity Department), 1942?), are a visual catalogue of contemporary buildings and provide an indication of the prolific nature of production. These texts are the largest resource of buildings that allow us to populate our inventory as well as allow us to make syntagmatic readings, when re-contextualising the historical narrative.

2.5 On Semiotic Tools and Analysis

The literature surveyed under this category discusses texts elaborating semiotic theories and Perceptual processes. Here, we seek out such literature that will help us articulate architectural positions with an aim to understanding architectural signification.

David Crow's 'Visible Signs' (2010) is a reader that explores the mechanics of visual language using theories from linguistics and semiotics. Demonstrating through visual examples how meaning is extracted from a sign, Crow shows the transfer of meaning from author to reader to be a process of creative exchange. The book further analyses the varieties of 'official (visual) languages' that are hierarchical and legitimised within territorial boundaries; and 'unofficial (visual) languages' that form independent of political and social control (pp. 8-9). The work of authors such as Saussure, Pierce, Bourdieu, Barthes and Eco form much of the resource for the ideas in this reader.

Naomi Neumann's paper 'Semiotics of architectural ornament: a method for analysis' (1986) sets out a methodology of analysing meaning in architecture with an aim to working out syntactic codes within the built form. In his essay 'From Signifier to Signified: Art Deco versus Functionalism' Mario Gagliardi (2006) points out that Art Deco glorifies the 'modern times' through decoration, symbolism and the reaffirmation of contemporary worldviews. 'Art Deco makes churches of corporate office buildings and temples out of department stores...' (Gagliardi, 2006) He makes a semiotic distinction between the aesthetic aims of Modernism and those of the Art Deco. 'The modernist preoccupation with the internal relation of the signifier (the appearance) and the signified (the content) produces purist, bare designs which probably appeal

to the intellectuals of the time...' On the other hand, in the case of the Art Deco 'the signifier (the design) detaches itself from the content, and makes the content look better. It covers the content' (Gagliardi, 2006). Gagliardi thus provides a possible strategy to observe inherence in the buildings of the time. Brenda Scheer's study 'The Evolution of Urban Form: Typology for Planners and Architects' (2010) provides definitions of types in building study as a class having certain global functions in common. Each individual building of a given type is an exemplar of that type, a variation that contains all the elements of the abstract term but may also look quite different from any other exemplar. Her book provides a set of tools for generating typologies entirely within the field of architecture and planning. According to Scheer, buildings may come and go but types may remain serviceable for centuries by means of minor transformations. Types may however change due to the forces of obsolescence or may be regulated out of existence (pp. 6-8).

Theo van Leeuwen and Gunther Kress posit principles and analytical tools of semiotic analysis that they refer to as 'Social Semiotics' (van Leeuwen, 2005) and (Kress & van Leeuwen, 1996). These provide a broader semiotic space beyond the conventions of structural semiotics such as those proposed by Barthes and seek to integrate semiotics with a discipline outside of it, in this case architecture. For insights into Object Analysis, Emmison and Smith (2004) provide primary justification for their use in the creation of a Semiotic Space. In their book, 'Researching the Visual', Emmison and Smith analyse 'visual research', using semiotics, ethno-methodology symbolic interactionism and material culture to look closely at everyday objects, places and forms of social interaction. Emmison and Smith talk about objects as material culture that can operate as indicators of wider socio-cultural processes and therefore serve as tools for a theoretically informed exploration of social life (Emmison & Smith, 2004, p. 109).

The theories of semiotician Algirdas Julien Greimas are of significance in the search for inherence in objects. Greimas' tools allow for that space to be populated with concepts that may be contradictory to each other but together offer a nuanced understanding of objects observed. Greimas posits a foundational precept of post-Saussureian linguistics: all language is arbitrary. There is no connection (other than convention) that links linguistic signs like writing or speaking to their referents. According to him, the articulation of texts conforms to structural rules within the text,

so semiotics or the study of signification becomes central to its comprehension. The connection between signification and the real world is completely arbitrary; however, signification is in itself not arbitrary since language tends to follow structural rules. Deep structures may bear no relation to the real world (Felluga, 2011). For semiotic tools developed by Greimas, two websites on semiotic theory are referred to; Daniel Chandler's 'Semiotics for Beginners' (Syntagmatic Analysis, 2010) and Louis Herbert's 'Signo' (Greimas: Introduction, 2009). Chandler's website is a detailed primer on Semiotics that comprehensively deals with the subject, its significance and methods. Hebert details of individual theories of several semioticians including Greimas whose tools are discussed at length. For our research, we find that three semiotic tools developed by Greimas' are useful for prising out deeper structures within the chosen Object, particularly its relations with entities both inside and outside of itself. The first, Greimas' *Semiotic Square*, is a tool for developing elementary structures of meaning by creating a visual representation of oppositional entities. The semiotic square is the elementary structure of signification, marking off the oppositional logic that is at the heart of both narrative progression and semantic, thematic, or symbolic content (Felluga, 2011). This is useful in delineating a larger semiotic space for the Object. The second tool developed by Greimas' is the *Actantial Model* (based on the theories of Vladimir Propp) that is useful to study the central member as an inherent network of imperatives or Actants. Greimas analyses the underlying grammar of narrative, using the symbolic, semantic, and cultural codes embedded within. He is interested in seeing how any specific instance of narrativity relates to a larger process of general meaning-making (or semiosis). The third tool developed by Greimas' is his concept of *Isotopy*. This is useful to examine elements of ornament on Art Deco buildings in Bombay as meaning traits (or *semes*) to allow for a more uniform interpretation or reading of the object (Hebert, 2009). Fredrick Jameson writings are useful as critiques to the work of Greimas as he points out to the conceptual limitations of the semiotic square and the exclusion of the historical influence on such analysis (Jameson, 1972). We must mention here that Greimas' work has been studied using secondary or explanatory texts only.

Charlotte and Tim Benton evoke the philosopher Ludwig Wittgenstein in their essay 'The Style and the Age' (2003). According to them, Wittgenstein "offers a useful analogy for unravelling Art Deco in his concept of a 'family of resemblances' to explain the word '*games*'. He pointed out that the word 'game' covers a range of usages that include contradictions... and the very

range of these meanings makes the word richer and more useful. Similarly, we might argue that the words ‘Art Deco’ are richer and more interesting for embracing apparently irreconcilable works...”(2003, p. 16) Michael Windover, in his book ‘Art Deco: a Mode of Mobility’ (2011) echoes Charlotte and Tim Benton’s problems of categorizing Art Deco as a Style. To pull together the “large and heterogeneous body of artefacts whose sole common denominator seems to lie in their contradictory characteristics,” they usefully turn to philosopher Ludwig Wittgenstein’s explanation of the word “games” as a “family of resemblances.” (pp. 17-18) While Benton and Benton, and Windover allude to the possibility to finding meaning to Art Deco through Wittgenstein’s theories, but they remain at that level and are not taken further. We attempt to do this, by transposing some concepts related to ‘family resemblances’ in the context of Art Deco architecture in Bombay.

Ludwig Wittgenstein in ‘Philosophical Investigations’ (1986) edition, asserts that most natural and intuitively developed categories do not necessarily have a defined boundary. The extension of the concept is not closed by a frontier (p. 32). Wittgenstein’s centrality is structured round a ‘good example’ which, according to Athavankar (1990, p. d6), is treated as a central member and others as its non-central extensions around it. Boundaries represent discontinuities between concepts, they seem movable, suggesting a fair degree of flexibility. In ‘Women, Fire and Dangerous Things: what categories reveal about the mind’ George Lakoff addresses this idea of Centrality, that some members of that category may be ‘better examples’ of that category than others (p. 12). This is germane to the investigations we intend to carry out based on the ‘bundles of features’ that we identify.

For insights into the formation of Exemplars or Central Members, we have studied the theories and tools propounded by Eleanor Rosch and adapted by Uday Athavankar. Uday Athavankar, in his paper ‘The Semantic Profile of Products’ (1990) , is informed by strategies of Human Information Processes to investigate the semantics of products. He describes the unique human strategies in product categorization based on Perceptual processes and develops models for graded membership based on a ‘central member’ showing a product to be a compound semantic statement. Extending the argument, membership of a particular object in a larger category may be a graded one, defined not by the boundary but by the core. Although the boundaries represent

discontinuities between concepts, there is a suggestion of a fair degree of flexibility. Evaluated on their basis of closeness to the central member, individual objects get a ‘goodness rating’ or ‘a degree of legitimacy’. Using the model proposed by Athavankar, and putting in as many diverse examples as possible, it should be possible to analyse the typicality of an individual object in terms of its *objectness*. Visual clues from objects trigger a mental search that (inevitably) activates a class of similar examples earlier coded, structured and labelled lexically (Athavankar, p. d2).

The ‘central member’ is reactivated as a ‘bundle of features’ (using the semiotic theories of Eleanor Rosch, see below). Eleanor Rosch’s paper ‘Reclaiming Concepts’ (1999) is based on her conception of prototypes and graded structures as Perceptual tools for classification and comprehension. Rosch speaks of conceptual processes that work, not with precision of categorisation, but with a fuzzier strategy of placing similar objects together based on an example that fits that category the best. The judged ‘best’ examples of conceptual categories are called *prototypes*, that, far from being abstractions of a few defining attributes, seem to be rich, imagistic, sensory, full-bodied mental events that serve as reference points in all of the kinds of research effects (Rosch, 1999). These categories tend to be at a level of specificity intermediate between global inclusiveness and perceptual particularity. Basic-level objects are easily rendered as simple gestalts, making them easy to identify and use as perceptual templates. Rosch describes these best examples as ‘*exemplars*’, which are culturally salient objects, people, or events. Rosch’s development of the concept of ‘exemplar’, used in this research as ‘Central Member’ is discussed in detail in Bradd Shore’s book ‘Culture in Mind: Cognition, Culture, and the Problem of Meaning’ (1996). Shore explains how the exemplar is manifested in best cases, metonymy, typicality, and basic-level Perceptual categories. Exemplars typify experiences by representing an ideal version and become the model against which other similar experiences are matched. *Object exemplars* are often the basis on which people classify objects (Shore, 1996, p. 64).

Several tools for this research have been adapted from Alvise Mattozzi’s paper ‘A Model for the Semiotic Analysis of Objects’ (2007). Mattozzi assumes that an Object is a body; an intersecting point in a network of relations. The object itself takes part in these relations and that other actors (objects) interact with it. Mattozzi asks how one can account for the way in which an object

signifies or takes part in the articulation of meaning. Mattozzi observes inherence in the object through its *intra-objectual* and its *inter-objectual* relations. The way in which an object takes part in the inter-objective relations is predisposed by the way relations with other actors are inscribed onto the objects itself (intra-objectual). Using this lead, the ‘central member’ shall be considered syntagmatically for antecedent inherencies that allow for its narrative program to be carried out. It shall also be examined paradigmatically for inherencies that can allow for all other objects that can replace the ‘central member’ it presupposes (pp. 1-3). Mattozzi investigates this using the example of Philippe Starck’s Juicy Salif to delineate its objectual relations.

2.6 Gap Survey

The survey of the literature on Art Deco as a style, its specific praxis in India and Bombay, and the philosophical and conceptual methodologies of semioticians and researchers in the Perceptual domain bring us up to date on the available knowledge. They reinforce some themes in common that define the discourse on the subject at hand, but in their reading we also discern some gaps in the available research.

As mentioned earlier, most of the research is historical and nature, and tends to observe and analyse Art Deco as a ‘Style’. Stylistic approaches focus on evolutionary trends and impulses, where the chronological beginnings, rise, high points, plateauing and subsequent decline and subsumation of the style into the later dominant style are charted. While this has its virtues, it does tend to miss out on the appreciation of the buildings for themselves. This is particularly relevant as architecture by its nature is relatively long lasting, and the building we have as the object of our study are to a great extent present and being continually used today. We believe a contemporary valuation for these buildings is relevant and vital and thus the buildings should be studied for themselves. We attempt to address this gap in the literature, by looking at these building as text, synchronously and ahistorically.

The methodological directions for our study lead us to analyse architecture semiotically, as the Art Deco buildings are best suited for semiotic analysis given the availability of the denotata and connotata on their facades that as the literature shows has an eclectic palette of influences and

adaptations to local conditions. In fact, the possibility that Art Deco architecture should be looked at semiotically has been alluded to and even encouraged by researchers like Windover (Art Deco: a Mode of Mobility, 2011), and Benton and Benton (The Style and the Age, 2003), but has not been followed up. In our research we attempt to do so, by analysing Bombay's Art Deco architecture using semiotic tools and methods.

One of our concerns, based on the available discourse has been that the buildings of the Art Deco era in Bombay (and India) have never been looked at as a synchronous set of available material for Object analysis. The 'style' has been discussed by certain canonical examples, rather than as a comprehensive reading of the architecture as a whole. This leaves a significant gap in understanding, which in terms of the literature start with the earliest researchers and then get carried forward by those who follow. It is our endeavour to assess whether these examples of Art Deco building are metonymous for the larger category of buildings or are stand alone in their presence in the literature. We seek to locate these buildings in their larger categories of similar buildings and also to find if there are other building worthy of reassessment and foregrounding in any subsequent research on Art Deco architecture.

2.7 Research Questions

Based on the survey of available literature, and the assessment of the current discourse on Art Deco architecture in Bombay, we raise the following research questions that we shall attempt to address in the course of this thesis:

1. How may buildings be semiotically read as texts (a built representation of a visual language)?
2. Can semiotic potential be identified through synchronous readings?
3. Can the architecture of the period and location (Bombay, 1930-1949) be collectively mapped to identify an exemplar/s for that period and location?
4. What is the nature of signification offered by Bombay's Art Deco building facades?

5. If the praxis of a period leads to the construction of self similar examples, how may such examples be collectively read for semiotic meaning?
6. How do semiotic readings of the buildings of Art Deco of Bombay between 1930 and 1949 fill the gaps in the discourse of the development of Bombay's/India's architecture?

Chapter 3 Research Design

3.0 Introduction

In this Chapter, we present the Research Design that is adopted for this thesis. We outline the methodological strategies used to analyze Bombay's Art Deco architecture. We present various tools that we shall use, based on the Research Questions presented in Chapter 2. Our Research Design is presented in three stages as given below. We conclude the chapter by discussing potential limitations of the methodologies, as well as possible questions that may be raised on the validity of the research.

3.1 Methodology and Research Design

The study of Art Deco buildings of Bombay (1930-1949) as semiotic texts is qualitative in nature, and contains casual-comparative methods as well as a respondent survey based on Perceptual identification. The methods so used are then analyzed for meaning and signification, addressing the questions raised earlier. These methodologies are based on the research of earlier semioticians and researchers in the Perceptual domain and are acknowledged as each stage is presented. In the first stage of the research design, we try to extend the larger semiotic environment in which our study is placed. In order to develop means of reading buildings as texts we consider them to be semiotic Objects that can be analyzed for their Intra and Inter Objectual resources and relationships (Emmison & Smith, 2004).

Here we address the following research questions: How may buildings be semiotically read as texts (a built representation of a visual language)? Can semiotic potential be identified through synchronous readings? A Theory of Objects is therefore sought, which is determined using the methods used by Alvise Mattozzi in his analysis of Philipe Stark's Juicy Salif as an Object that is also an Actant (Mattozzi, 2007).

We generate a larger semiotic space using the Semiotic Square developed by Algirdas Greimas (Chandler, 2010) (Felluga, 2011). Greimas' Semiotic Square allows for developing elementary structures of meaning by creating a visual representation of oppositional entities. We also use his Actantial Model (based on the theories of Propp) to study the intra objectual relations on an Object building as an inherent network of imperatives or Actants. Greimas' concept of Isotopy is used to examine elements of ornament on Art Deco buildings in Bombay as meaning traits (or semes).

Using Matozzi's Object Analysis we determine the Intra-Objectual formants, Discontinuities and Superimpositions relevant to our study. Using this lead, an exemplar shall be considered syntagmatically for inherencies that allow for its narrative program to be carried out. It shall also be examined paradigmatically for inherencies that can allow for all other objects that can replace the 'central member' it presupposes. Ludwig Wittgenstein asserts that most natural and intuitively developed categories do not necessarily have a defined boundary; but are often

structured round a ‘good example’ which is treated as a central member and others as its non-central extensions around it (Athavankar, 1990, p. d.6) Using these concept of the ‘central member’ we determine a methodology of looking at the buildings in the inventory as a collective, for an Intra Objectual analysis of buildings that represent the best examples of the type.

For the second stage of our Research Design, we address the following Research Question: Can the architecture of the period and location (Bombay, 1930-1949) be collectively mapped to identify an exemplar/s for that period and location? In order to accomplish this, an attempt is made to develop Art Deco Exemplars based on descriptors present in the available literature as a semiotic resource. The concept of exemplars is derived from the work of Eleanor Rosch and Bradd Shore. Rosch also presents the concept of Basic Object made of perceptually simple elements that can be identified easily by most observers. These exemplars become the locus for addressing each of the buildings in our inventory for proximity and distance creating a Map of best examples (Rosch, 1999) (Shore, 1996). This latter uses the research of Uday Athavankar in the determination of a Graded Membership given a resource of objects that show family resemblances. Athavankar proposes a model of ‘graded membership’ based on the motivation that the real world induces on the mental world; which in turn activates it into providing a response. Visual clues from objects trigger a mental search that (inevitably) activates a class of similar examples. The ‘exemplar’ is reactivated as a ‘bundle of features’ (using the semiotic theories of Eleanor Rosch).

While Art Deco, seen as a style covers all typologies to qualify as a style, it does manifest differently with typology specificity. In our effort to decode ‘family resemblances’ we also make a case for looking at the Art Deco buildings in Bombay based on sub-categories of building typologies rather than as a single collective. Therefore, an exemplar is developed for each of the three categories we have identified for analysis- Cinema Houses, Office Buildings and Apartment Buildings.

The third stage of our research design attempts to answer the question of the nature of signification offered by Bombay’s Art Deco building facades. If the praxis of a period leads to

the construction of self similar examples, how may such examples be collectively read for semiotic meaning? This is addressed by using a methodology to identify Basic Objects on each of the buildings in our inventory, to determine the simple presence/absence and frequency of these collectively.

This method is then given richness and texture by adding a weighted determinant for each Basic Object based on the perceptibility of each Basic Object by a group of respondent observers for being best representative of Art Deco architecture in Bombay. In order to determine the weighted scores we conduct a Perceptual Survey of respondents who have an awareness of Art Deco architecture and can identify its various constituent elements. Respondents are asked to choose Basic Objects from a list of images of various parts of Art Deco facades and rate them for best associations. Based on the collation of this survey, on the frequency and the mode of the Objects most preferred a set of weights is determined that is then put back into the Basic Object identifications as a Weighted Basic Object Mapping. The two are then compared and analyzed for semiotic meaning.

It is our endeavor, through this Research Design and analysis, to fill the gaps in the discourse of the development of Bombay's/India's architecture through semiotic readings of the buildings of Art Deco of Bombay between 1930 and 1949.

3.2 Some Assumptions

Our Research Design focuses on the architectural facades of buildings built in Bombay¹ during the period 1930-1949, and limits itself to the elements that make up the facades and not the buildings as a whole. With respect to these specific types of buildings, we consider this adequate for our studies as the signification of the buildings themselves are the product of visual syntax

¹ Despite our basic assumption to study Art Deco buildings in Bombay from the period of 1930-1949, we have, in two cases, used in our inventories buildings that predate and post-date the chosen period (as in the case of cinema houses) as well as used buildings that are from outside Bombay (as in the case of cinema houses and office buildings). These were done to add richness to the semiotic mix, so to speak, and to open up the possibility of this study to extend to buildings beyond our current field in future research. These additional buildings we have found act as a 'mirror' to the buildings of Bombay and allow for inferences that would otherwise not have been available.

available on the facades. Building interiors are not included in this research. Data is gathered on building facades of three typologies- Cinema houses, Office buildings and Apartment buildings (explanations for these choices are provided in later chapters) that are collected in inventories which are then mapped for their architectural features and analyzed.

In order to do so, we have relied both on physical site observations, as well as on photographic evidence of the buildings, especially taken during the time when they were originally constructed.

We have done so for the following reasons: the buildings in the inventories are now around eighty years old, and have over time been subjected to the wear and tear of everyday life as well as the lash of the tropical elements that make up the climate in Bombay. These buildings are almost all in continuous usage and have over time been altered and added too. For example an additional floor has been added to almost every apartment building in our inventory. This has tended, in some cases, to obscure the original massing as well as the details on the facades. We have therefore, given an option, preferred an older photograph that clearly shows the building in its original conception over the current fabric status of the building. All our physical observations on site are accompanied by the documentation of buildings as they are, but we have in our data collation accounted for clearly obvious changes in the facades over time and attempted to see the buildings as they originally were.

3.3 Participants in the Survey Conducted

In the Survey we conducted, the sample size of the respondents was 79. We asked our respondents to identify architectural features from a list of images that were presented to them to choose and rate which of the features they considered most representative of Art Deco architecture in Bombay. All our participants were those who were aware of Art Deco architecture and were familiar with its characteristics (See a Survey template in the Appendix for this undertaking). While this was the primary basis for the selection of respondents they were also largely from the field of design, encompassing architects, engineers, urban designers and

artists, as well as the majority being inhabitants of Bombay, who have lived and worked in the areas where these buildings proliferate.

3.4 Limitations of the Research Design

We approach our research by observing and mapping for signification the facades of buildings built from 1930-1949. Our research design allows us to read buildings as semiotic text and to extend the discourse on Art Deco architecture in Bombay. We accept the following limitations to the various methodologies adopted to achieve this end:

The reliance on photographic documentation- especially on photographs that are of the same vintage as the buildings under study. We accept that each photograph is by its very nature subjective and is prone to provide only the information that is within its frame. However since we are specifically interested in the building elements on the facades, we believe that the images which are taken as architecture documentation of buildings recently built provide sufficient and correct information for the purposes of our research.

The buildings under study may have changed over the last eight decades. We have already addressed this as an assumption made earlier and applied correctional measures. But these are subjective to the researcher.

Any inventory is inherently limited by the number of elements that populate it. In our case too, the inventories we have identified can certainly be added to, given the number of Art Deco buildings built in Bombay during the period under study. However we have limited ourselves to those buildings that provided the most reliable information about their facades, based on the evidence described above. As older images emerge from archives hitherto unseen, these inventories would certainly get added to.

Chapter 4 Buildings as Text: Identifying Semiotic Signifiers/attributes from the Object/Text using Intra-Objectual and Inter-Objectual Relationships

4.0 Introduction

Art Deco in Bombay is an architectural style lodged in the popular imagination of its inhabitants. Over the years, architectural historians have variously tried to describe it within the processes of urbanization of Bombay, admired its wildfire popularity and its decorative whimsy. However, the specificity of buildings that should be included in the category of Art Deco in Bombay has always been vague. Conventionally, buildings in Bombay from the 1920s to the 1950s are included in this category. These include cinema houses, office buildings, commercial buildings and residential typologies like apartment blocks, apartment schemes, and bungalows. The buildings from the 20s to the 40s displayed a richness of patterns, geometry, ornament and iconography on their facades, along with a diversity of architectural form, occasioned due to the use of modern technology and materials.

Art Deco in Bombay was an architectural style that rose tentatively, gained popularity, reached a tipping point in the early 1930s, raged like wildfire for about a decade and a half not only in Bombay but all over India and then was subsumed into modernism, particularly after Indian independence.

In Bombay, Art Deco coincided with the aspirations of the rising middle classes and soon gained easy acceptability. This was a period of large scale building activity, a boom almost, made possible by the opening up of the first suburbs settled in Bombay north of the mill-lands and on the vast Backbay reclamations in the south. During this time, the first Indian architectural practices developed, first in Bombay and then beyond, and these practices designed a bulk of these buildings all over what was then colonial India.

4.1 Buildings as Text: Object Analysis

In our survey of the available literature on the subject we have concluded that Art Deco buildings in Bombay have rarely been looked at from anything other than a historical lens. To fill this gap, our research intends to look at these buildings as objects in themselves. The processes, methods and tools adopted to attempt this are semiotic, and the objects/buildings shall be examined and analyzed synchronously and (largely) from an ahistoric standpoint. Here we attempt to answer the following questions:

- How may buildings be semiotically read as texts (a built representation of a visual language)?
- Can semiotic potential be identified through synchronous readings?

There is a value for this kind of *object analysis*, of a visual investigation of Art Deco architecture in Bombay, as objects in themselves, “as inferences can be made from their particular spatial contexts (Emmison & Smith, 2004, p. 109). As we have discussed before, Objects are fairly ubiquitous and leave such traces as can be easily comprehended. As such they make ideal ‘objects’ of research that can be observed and mapped with rigor. However, it is also understood that there are inherent limitations of object analysis. This first is the selective availability of materials. In our case, the building facades we choose to examine are nearly a century old and have faced the vagaries of time, nature and human occupation. As researchers, we are keenly aware of the possibility of disjunction between our own understanding or interpretation of an

object and that of the user/designer. It is not always clear to what extent this provides an accurate picture about the present (Emmison & Smith, pp. 149-150). Nevertheless, it is the aim of this semiotic research to chart in detail the saliences that can allow Art Deco buildings in Bombay to be analyzed.

4.2 Developing a Theory of Objects

We proceed by deeming an Art Deco building in Bombay (cinema house, office building or apartment building) to be an ‘Object’ with both salience and imperative that can be read for semiotic significance.

To this end, we turn to the tools set out by Alvise Mattozzi in his paper ‘A Model for the Semiotic Analysis of Objects’ (2007). Mattozzi assumes that -

- an Object is a **Body**
- an Object is an **intersecting point in a network of relations**
- the Object itself takes **part in these relations and that other actors (objects) interact with it**

He observes inherence in the object through its *intra-objectual* and its *inter-objectual* relations. The way in which an object takes part in the inter-objective relations is predisposed by the way relations with other actors are inscribed onto the objects itself (intra-objectual).

Using this lead, the Object or, in our case building façade may be considered syntagmatically for inherencies that allow for its narrative program to be carried out. The Object/building may also be examined paradigmatically for inherencies that can allow for all other objects that can replace the building within the network (for example, Art Deco architecture as observed in Bombay/ in Cinema Houses in Bombay) it presupposes (Mattozzi, pp. 1-3).

In his paper, Mattozzi also channels the theories of the semiotician Algirdas Greimas significantly. We use Greimas’ tools of semiotic analysis for prizing out deeper structures within Object/ building, particularly its relations with entities both inside and outside of itself. Greimas’ *Semiotic Square* is a tool for developing elementary structures of meaning by creating a visual representation of oppositional entities. We shall use this to establish a larger semiotic space for

Art Deco buildings in Bombay. Greimas' *Actantial Model* (based on the theories of Propp) shall be employed to study the Object/building as a network of imperatives or Actants².

4.3 Functions performed by the Object/building

Given the conventional notions of Art Deco based on historical research, an Art Deco building facade expresses an architecture built in RCC, may have ornament in relief articulating the facade, has an urban presence and represents the worldview and aspirations of the rising middle classes in Bombay during the 30s and 40s. *"Art Deco embodied the Modern elegance and comfort depicted in films... Regal, Eros and Metro and the films projected within them, portray society with new symbols, as they idealized modern experience* (Vinnels & Skelly, 2002, p. 29)." At the time, the idea of contemporaneity through various urban constructs was well established within the cultural sensibilities of the citizens of Bombay, and thus can serve as an index for several of the historic and urban trends that were prevalent at that time.

If an Art Deco building in Bombay is deemed to be an Object for semiotic analysis, it follows therefore that the building is a singularity (having a body), and, at the same time participates in a multiplicity of relations, forming what Mattozzi calls an *actor-network* (Mattozzi, 2007, p. 1). As an object therefore, it acts and is used. The manner in which this happens is based on the way the object is articulated. Also, the Object/building, being located in the city of Bombay may be seen in the context of several other urban elements (objects). These can be listed below as:

The several contexts of the Object/building	
• RCC frame construction technology • Surface Ornamentation • Climatic adaptations for the Tropics • Reclamation/ Urban Planning locations • City Improvement Trust	• Indian Architecture Firms • Modernist/Cosmopolitan Outlook • Rise/ aspirations of the Educated Middle Class • <i>'Bombay Meri Jaan'</i> • Hollywood/ Hindi Cinema

Table 4.1 The several contexts of the Object/ Building

4.4 Inter-Objectual and Intra-Objectual relations

The Object/building is constituted by its intra-objectual relations (which are the sum of its parts through which it is articulated) and its inter-objectual relations (which form its semantic

² Greimas' Actantial Model can theoretically be used to analyse any real or thematized action, but particularly those depicted in texts or images. In the actantial model, an action may be broken down into components called actants. Actantial analysis consists of assigning each element of the action being described to the various actantial classes (Hebert, Greimas: Introduction, 2009).

coherence in practice). Mattozzi's indicates that both these relations, while inherent to the object itself, are critical to the articulation of meaning, where actual signification is produced.

Thus, intra-objectual relations within an Object/building are articulated syntagmatically through a network of relationships that allow its narrative program to be fulfilled. Inter-objectual relations, on the other hand, create a system where it is possible to paradigmatically place an object within a context of other objects that can presumably replace it within the network of a specific building in Bombay and Art Deco architecture in Bombay respectively.

The narrative program depends on what the object emerges to be, that is, the figure to which the shape of the object can be correlated. The Object/building may therefore be analysed firstly through its plastic configurations- looking at it as a singularity and, as shall be seen later, as an actant. The relation between the figure and the plastic configuration is mediated by the body of the Object, which is articulated as a core and an envelope (analyzed later). The core relates to what the building does (cinema house, office building, apartment building, urban object), and thus creates the narrative program; while the building's envelope forms the interface between the core and other bodies (users, other buildings). The envelope manages the relations between the inside and the outside (the above summation is extrapolated from Mattozzi, (2007, p. 3).

4.5 Generating a Semiotic Space- the Semiotic Square

In order to unravel the semiotic possibilities of the object in question, a methodological framework needs to be adopted that can invest the object (sign) with meaning. To create a semiotic space around the concept of the Art Deco facade in Bombay and the often stereotyped relationship with Art Deco and cinema, it is possible to look at the larger implications of these associations by adopting a model of analysis from Algirdas Greimas called the 'Semiotic Square'.

The Semiotic Square was conceived by Greimas as a means of analysing paired concepts more fully. By placing a text within the square, logical conjunctions and disjunctions relating key semantic features are mapped within a larger contextual framework. This results in a richer space

of signification as compared to the either/or logic of a binary concept, and bring hitherto unseen but vital relational significances to the fore.

Greimas' Semiotic Square has both syntactic and semiotic uses: Syntactically, it makes an examination of successive positions occupied in the square possible. The temporalities created- the order of the narratives and the sequence from one part to the next bring out narrative relationships that ordinary binaries obscure.

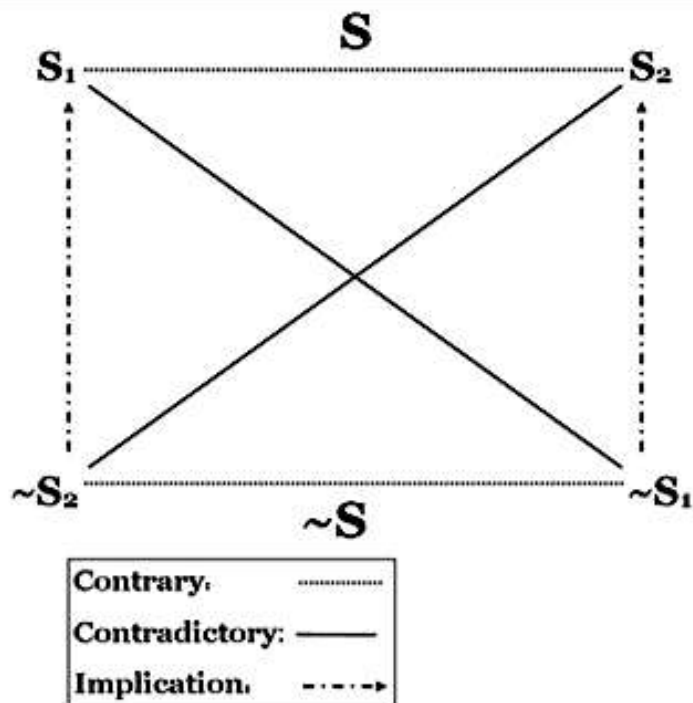


Figure 4.1 The Semiotic Square by A. J. Greimas (from Chandler, 2010)

At a semantic level, The square sets up oppositions of contraries seen (in the Figure above) as S_1 and S_2 , and $\sim S_1$ and $\sim S_2$, projects sub-contraries ($\sim S_1$, or not- S_1), creates meta-terms (S) through fusion and juxtaposition. 4 terms give rise to 6 meta-terms that manifest the possibilities within a single semantic space (Hebert, 2009).

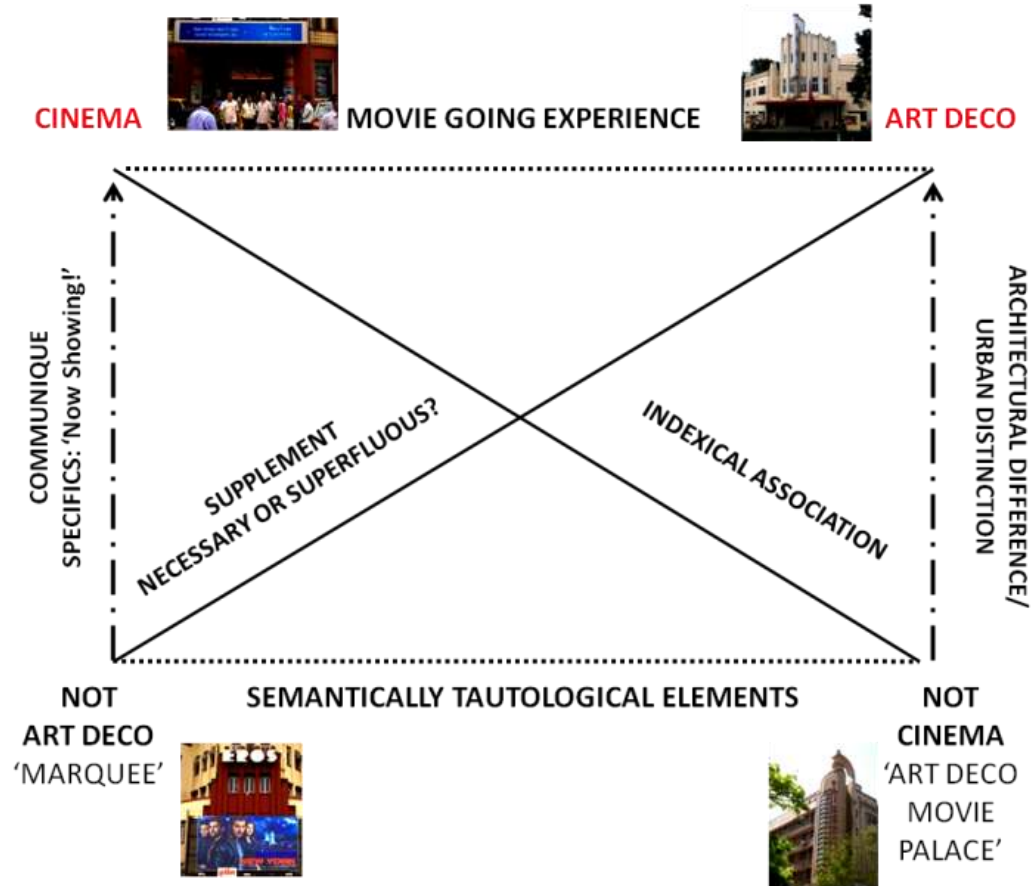


Figure 4.2 Paired Concept 1- Cinema and Art Deco in the Semiotic Square

Positions	Relations	Terms & Meta-terms	Qualifications
S1	Paired Concept	Cinema	
S2	Paired Concept	Art Deco	
~S1	Sub-contrary	Art Deco Movie Palace	Not Cinema
~S2	Sub-contrary	Marquee	Not Art Deco
S	Contrary	Movie-going experience	Core (central function)
S2 - ~S1	Implication (Deixes)	Architectural Difference	Urban Distinction
~S	Contrary	Tautological Formants	Both play the same role
~S2 - S1	Implication (Deixes)	Communicant/Signifier	To user
S1 - ~S1	Contradictory	Supplement	Necessary or superfluous?
S2 - ~S2	Contradictory	Indexical	Art Deco means cinema

Table 4.2 Analysis of Semiotic Square- Cinema and Art Deco

4.5.1 Paired Concept 1- Cinema and Art Deco

Historically the Art Deco style has been closely identified with cinema and Hollywood in particular. In the early twentieth century, the famous cinema studios of Hollywood like Metro Goldwyn Mayer and United Artists patronised the buildings of cinema houses worldwide to promote their films.

The cinema houses they built were mostly in the Art Deco style that was highly ornamental. Jon Alff (1997) describes the influence of Hollywood styles on ‘Art Deco’ Cinema Houses in Bombay affirming Bombay’s obsession with the movies. This received its first boost by 1933, when Bombay accumulated more than sixty cinema houses (and nearly 300 by 1939) including seven talkies located in traditionally styled buildings (p. 251). This Hollywood style, a *Gesamtkunstwerk* (Total Design) was shown off best in the Eros, the Regal and the Metro in Bombay (Dalvi, 2000, p. 16). Using Greimas’ Semiotic Square we pair the concepts of ‘cinema’ and ‘Art Deco’ to create a larger semiotic space:

4.5.1.1 Semiotic Analysis

The semiotic space created using the Greimas’ square brings into larger play the idea of the cinema house as an Art Deco object. Indeed the art deco building is an index for cinema ($S_2 - \sim S_2$), which is a conventional association built over time.

The building and the marquee form sub-contrary elements (S_1 & S_2) which together contribute to the movie-going experience (S), and yet, as formants they are both tautological (in performing the same function and also oppositional ($\sim S_1$ & $\sim S_2$)).

There is an interesting diexes (the interpretation of the text based on the analysis of the context of the text) created between the marquee and cinema in being the temporal index to the movie being currently shown ($\sim S_2 - S_1$), an internal dialogue that can be understood as a communication within the context of the proposed activity and what the activity is. Its interpretation is not imperative on a direct relationship with the building in which the activity happens.

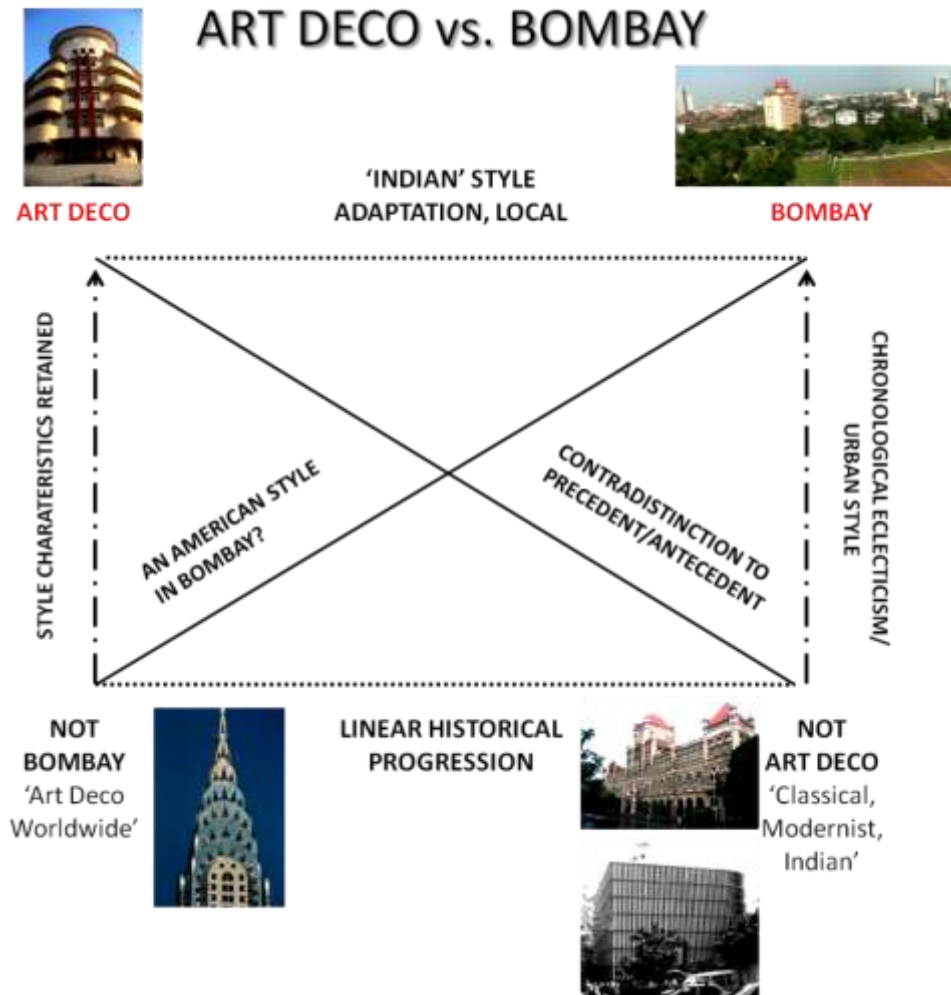


Figure 4.3 Paired Concept 2- Art Deco and Bombay in the Semiotic Square

Positions	Relations	Terms & Meta-terms	Qualifications
S1	Paired Concept	Art Deco	
S2	Paired Concept	Bombay	
~S1	Sub-contrary	Classical/Modernist	Not Art Deco
~S2	Sub-contrary	Art Deco worldwide	Not Bombay
S	Contrary	Indian/Bombay Style	Local Adaptation
S2 - ~S1	Implication (Deixes)	Chronological Eclecticism	Synchronous styles
~S	Contrary	Linear Progression	Dia-chronic/ historical
~S2 - S1	Implication (Deixes)	Retention of Stylistic Elements	Art Deco signifiers
S1 - ~S1	Contradictory	An American style in Bombay?	No automatic relationship
S2 - ~S2	Contradictory	Stylistic Contradistinction	Identified by difference

Table 4.3 Analysis of Semiotic Square- Art Deco and Bombay

4.5.2 Paired Concept 2- Art Deco and Bombay

From the early 30s to the late 40s there was huge output of architecture and urban place-making in Bombay, largely the work of architects educated in Bombay and their mentors. In contrast to the imperial architecture of the British, Bombay's home-grown architectural fraternity embraced Modernism with Design that was both international in outlook and quite contemporaneous in sensibility (Dalvi, 2010, p. 3). It gained popularity and widespread acceptance by architects and clients in Bombay and soon spread to the rest of the country. Today, this phenomenon is referred to by the catch all, but sometimes misleading appellation of 'Art Deco'.

4.5.2.1 Semiotic Analysis

When one examines Art Deco in Bombay, an awareness of its synchronous and diachronous locations is inevitable, even if they are suppressed for this exercise in semiotic analysis. While Art Deco was prevalent in Bombay it was also the style of choice in almost all the continents worldwide (~S2/ diachronous).

By the same token, in India too, at both in its initial stages and in its later stages, Art Deco co-existed with the classical and the modernist styles of architecture (~S/ synchronous) delineating the historical progressions that architecture in Bombay in the late 19th and early 20th century was subject to (~S).

While Art Deco was clearly an import, it preserved enough characteristics from the American originals (~S2 – S1), even as it adapted locally (S). One curious association is also established between the city and the style that it adopted (~S2 – S2) that requires further research: why did the city of Bombay embrace an American style of architecture as its most popular choice?

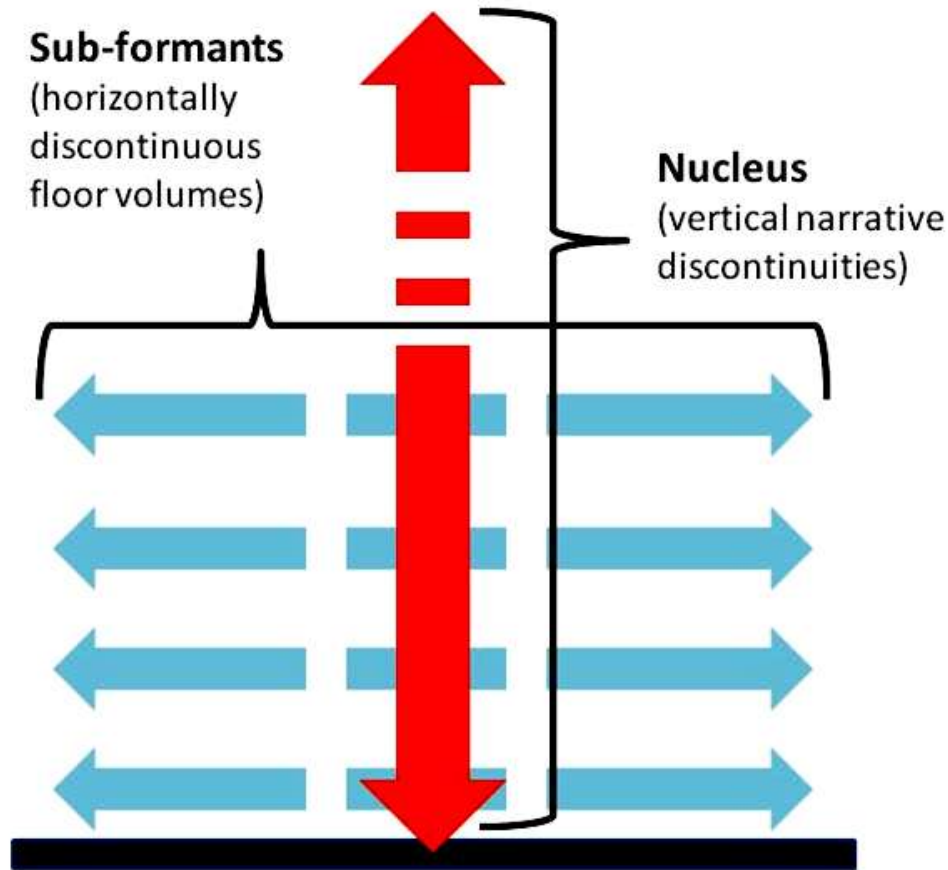


Figure 4.4 Intra-Objectual Relationships

4.6 Intra-objectual relations in Object/building

In any Object/Building, intra-objectual relations are observed within the plastic configuration- its body and its figure, both of which act together to constitute the object. While the plastic manifests in shapes, colours and textures of the object, the figure has to do with the Object/building in the external world.

4.6.1 Plastic Contrasts- Formants

Any Object/building displays distinct formal characteristics that allow for the identification of its plastic parts. As a building, it consists of a central object set that is wrapped around with another object set. Both these have functional and figurative inherencies, but of different degrees. These object sets are referred to as formants and sub-formants.

4.6.2 Plastic Contrasts- Discontinuities

In an Art Deco Object/building, a series of discontinuities are foregrounded along a symmetrical or asymmetrical axis, normally although not exclusively containing the entrance, signage stairwell-shaft and culminating in a tower-like structure that rises above the building. The shaft and tower are (normally) streaked with architectural elements/ornaments, emphasizing its verticality while making it stand out from the rest of the Object/building. We describe this central set of formants as a ‘nucleus’³, taking a phrase from Matozzi. (A Model for the Semiotic Analysis of Objects, 2007)

The rest of the Object/building, or sub-formant is articulated horizontally with functional fenestration and. The sub-formant is articulated symmetrically or asymmetrically into two (almost) identical sub-formants, normally on either side of the central discontinuities. The sub-formants form a foundation for the nucleus to assert its presence. Discontinuities are also observed over the sub-formants in the manner in which balconies are arrayed, the floor bands that articulate individual building storeys or the manner in which the base floor of the building differs from the ones above.

4.6.3 Plastic Contrasts- Superimpositions

Formants, sub-formant and discontinuities are layered over with superimpositions in the form of ornament both enhancing and nuancing an otherwise unarticulated base. However, the sub-formant are normally more integrated in its articulation as compared to the nucleus, whose discontinuities are obvious and frequently highlighted.

³ In the case of cinema houses, there exists one more plastic element that is supplemental to the building but has a more figural role (as shall be discussed later) - the **marquee**, which forms the formal communicator for the featured movie that is currently showing. The marquee is both indispensable and irrelevant to the formant. This is because it is temporal in nature, changing with the movies featured.

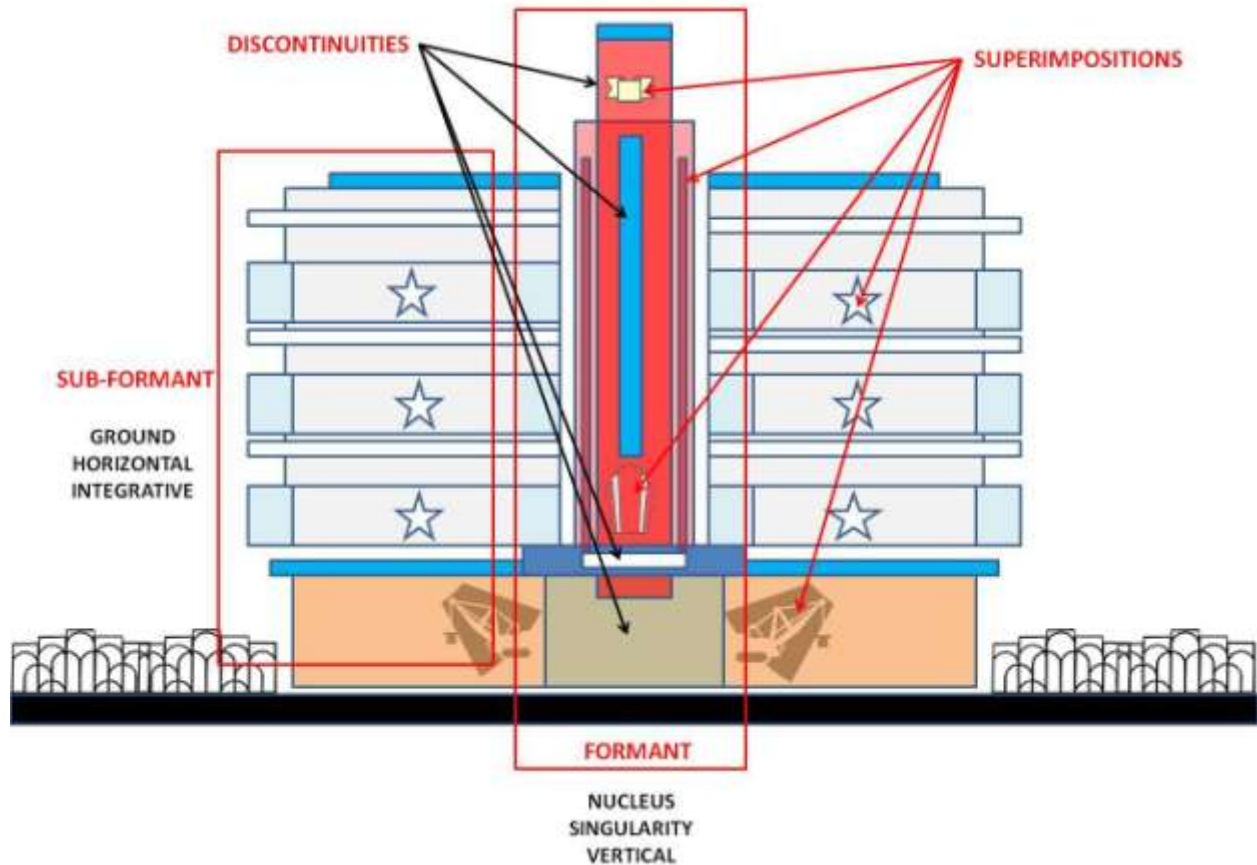


Figure 4.5 Plastic Contrasts (Formants, sub-formants, discontinuities, superimpositions) on an Object/Building

The figure above, encapsulates, in summary the plastic formants articulated on an Object/buildings. Here, the nucleus positioned centrally highlights, using discontinuous elements, the verticality of the object and stands apart as a singularity, while the sub-formants act horizontally, integrating the building with the context, and providing a substratum for the vertical to spring from. An Object/building, as a plastic configurant, is a complex object with a formants (and sub-formants), discontinuities and superimpositions. There is a complex articulation of these parts that create the dynamics by which the object can be comprehended. Each of these have their own semiotic value and shall now be discussed in detail for signification.

4.7 Formants and sub-formants

Formants and sub-formants are those plastic parts that can be read for inherencies in the intra-objectual relations of the object/building. Apart from their plastic properties, as described above, they also have figural properties upon which semantic meaning can be based.

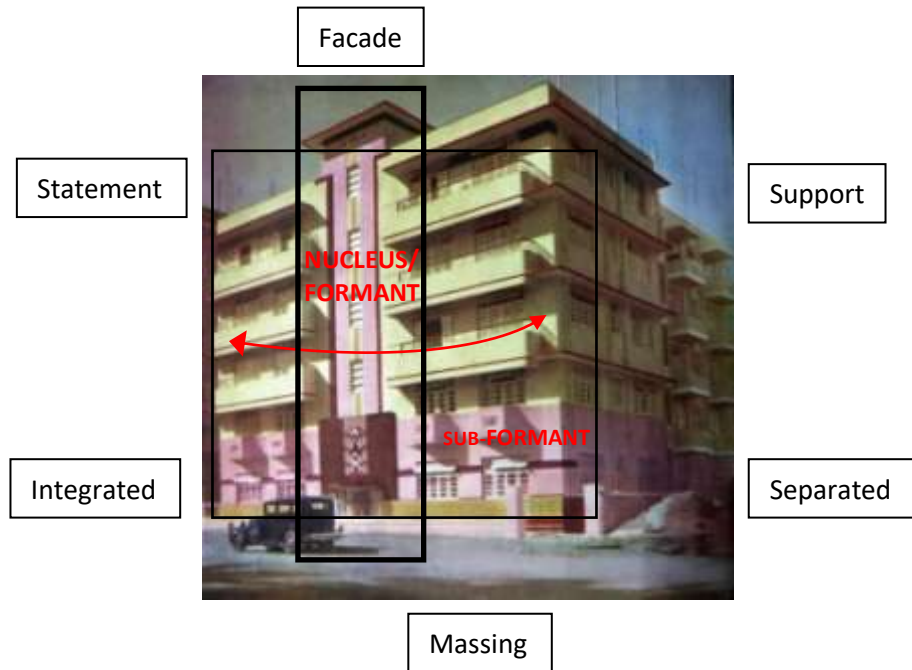


Fig 4.6 Formants and Sub-formants on Rusi Court, Bombay

The primary formant organizes the narrative schema of Object/building around itself, as can be seen above, using the example of the Rusi Court in Bombay. It has singular/stand-alone properties although it is itself demarcated discontinually and hierarchically from ground to sky (entrance/signage/shaft/tower). The nucleus articulates the core (which is the function of fulfilling the experience of the user). The building has massing that is strongly demarcated and its architectural facade has an influence on its immediate surroundings as well as exists as a landmark on the skyline of the city. The formant identifies readily with the ground/base inverting itself to form the entrance, but also meets the sky in a 'heroic' gesture (tower). The vertical axis around which the nucleus is articulated allows it to stand separately from the rest of the envelope (sub-formants).

The sub-formants are the architectural envelope that make up the Object/building. The sub-formants are organized on either side of a symmetrical axis. Their primary figural function is to complete the core. They form the sub-stratum upon which the discontinuities enact narrative syntax, and are accordingly demarcated weakly, on a largely functional basis. The sub-formants meet the street actively, and in their articulated horizontality establish a syntagmatic narrative

with other Object/buildings on the street. At a figurative level, the sub-formants are the ‘quotidian’ or every-day aspects of the objects, forming (to use a phrase from Louis Kahn) servants to the served core.

4.7.1 The core and the envelope

The *core* and the *envelope* form the figural expression of the object/body. According to Mattozzi, the core is related to transformations- actions, what a certain body does, hence the narrative program; the envelope is an interface between the core and other bodies so that it manages the relations between the inside and the outside- i.e. it is related to how a certain body does what the core predisposes (p. 3).



Figure 4.7 Core and Envelope as seen on the Eros Cinema, Bombay

In the case of a cinema house like the Eros in Bombay (as seen in the figure above), this accounts for the narrative program- the act of movie-going, or the act of experiencing cinema. In this set of relations, the marquee or the cinema hoarding indexically denotes the narrative program.

The marquee has a unique entity in the program that is dynamic, frequently changing, yet self-similar and constant in its location. The marquee is also an index for the entrance, which it denotes for observers at a distance; and is located directly above the entrance- part of the

narrative syntax of the cinema house. The envelope is the Object that allows the core program to be fulfilled. All the formants work together toward this fulfilment.

In the case of Eros, the nucleus and the sub-formants combine to make up the envelope. The nucleus is also a figurative formant for the core, which it denotes at the level of the city, making a distinctive mark on the skyline. The distinctively ornamental tower of Eros Cinema is a landmark and forms a visual cue for its core program. The sub-formants establish figurative relations with other buildings along the stretch of the Oval Maidan, at whose apex the Eros cinema is placed, in creating urban harmonies. They are thus syntactically (and synchronously) associated with other neighbouring objects.

4.7.2 Narrative Syntax

The Object/building becomes a (per)formant at a functional level affecting a narrative that provides for the fulfilment of the user experience.

The formants act as events in a sequence unfolding synchronously, from an outward to an inward imperative that compels the user to enter the building towards the hypothetical object of value- the experience of cinema, say, in the case of a cinema house. To aid this process, the formant subverts its own form to transform from plastic to spatial, creating a welcoming aspect- an entrance leading on from a public street. The centrality of the figural superimpositions along with the communicating marquee/signage work synchronously to bring the audience in.

4.8 Discontinuities

At another level- that of the Object/building's position in the city, the formants and discontinuities together act out a narrative syntax by a complex articulation of individual parts through which tension (and comprehensibility) is created. Both horizontal and vertical discontinuities, work with the sub-formants to create syntax for the nucleus to explicate, where the gaze follows strong demarcators that rise centrally from the entrance, discontinuously being

converted into a vertically streaked shaft, to culminate in the tower meeting the sky, an alternative fulfilment of a narrative effected by the nucleus.

4.8.1 The Actantial Model

Intra-objectual relations developed in the component configurations of the Object/building allow for a reading of oppositional binaries. Much of the narrative played out on the building is the result of the interplay between these binaries like up/across, vertical/horizontal, nucleus/sub-formant and so on. These binaries are oppositional entities that form the envelope of the structure.

SYNTAGMATIC ANALYSIS of vertical discontinuities As presupposed by the object in order to carry out its narrative program		
TOWER		Landmark/ Visual cue identifiable from distance
SHAFT	(Actor)	Creates affinity at medium range; unveils intricacies of core/envelope; gives direction
MARQUEE/ SIGNAGE	(Actor)	Crucial signifier of core; dynamic; temporal; can attract or repel
ENTRANCE		Clearly indicative; centripetal; crossover indicates fulfilment of narrative program by Subject
USER	(Actor)	Subject

Table 4.4 Syntagmatic Analysis of Vertical Discontinuities

NARRATIVE SYNTAX



Figure 4.8 Narrative Syntax breakdown of a Cinema House in Bombay

The narrative interplay is best brought out when the formants of the Object/building are analysed using the Actantial Model (1966), developed by the semiotician Algirdas Julien Greimas. In using this model, a generative grammar of narrative can be created, in which a finite number of functional (contextual) themes can be juxtaposed in binary oppositions that play/enact possible roles like subject-object; sender-receiver; helper-opponent.

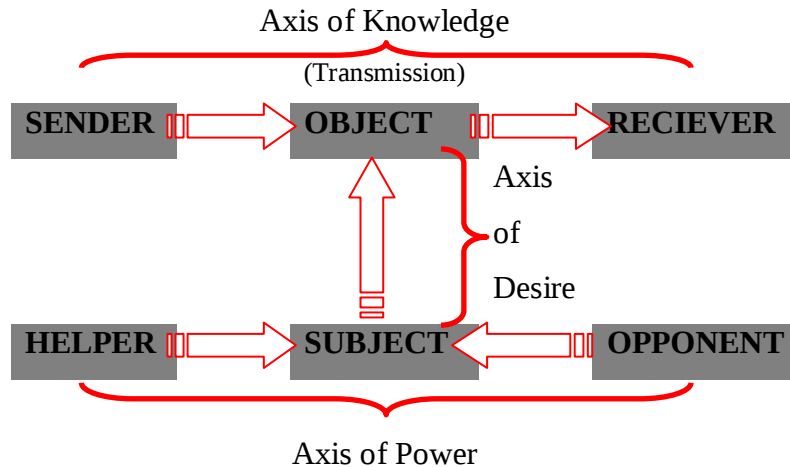


Fig 4.9 The Actantial Model (after Greimas, 1966)

These are the three basic binary oppositions that Greimas claims underlie all narrative themes, actions and character types, which he collectively calls ‘actants’ (Chandler, 2010). Greimas’ ‘actants’ are non-human, syntactically defined themes whose performance presupposes a level of competence (Lenoir, 1994, p. 125). These competencies can be seen as a desire for fulfilment; a communication across a medium that generates tension within the narrative structure. Greimas’ created his model of the analysis of narratives- stories and folktales. Can this model be effectively applied to a narrative analysis of the figural aspects of an object, in this case a cinema theatre? Let us, once again, observe the Art Deco Cinema House Eros. Here the subject is clearly the user or the cinema aficionado. Greimas argues that the hero is both *subject* and *receiver* (Chandler, 2010). This is also observed in the Object/building - the user seeks fulfilment in acquiring the Object, which is the experience of user.

4.8.2 Actantial Analysis of an Art Deco Cinema House

The Building (or envelope) sends appropriate urban signals that communicate to the receiver, in this case the user, that welcome the user into the building for the fulfillment of this primary desire. The user is therefore both subject and receiver. In the case of a cinema house, a power axis is also generated in an ongoing face-off between the nucleus and the marquee. These two actants vie for primacy: the nucleus (tower/shaft/entrance) is the actant-helper, who invites the actant subject to fulfil the narrative schema (object) by soliciting objectual attention. On the other hand, the (temporal) marquee, denoting the object’s core; flip-flops as an opponent/helper

actant, creating conjunction or disjunction, attracting or repelling fulfillment; nevertheless, wresting away the centrality of the nucleus.



Figure 4.10 Actants on the Eros Cinema, Bombay

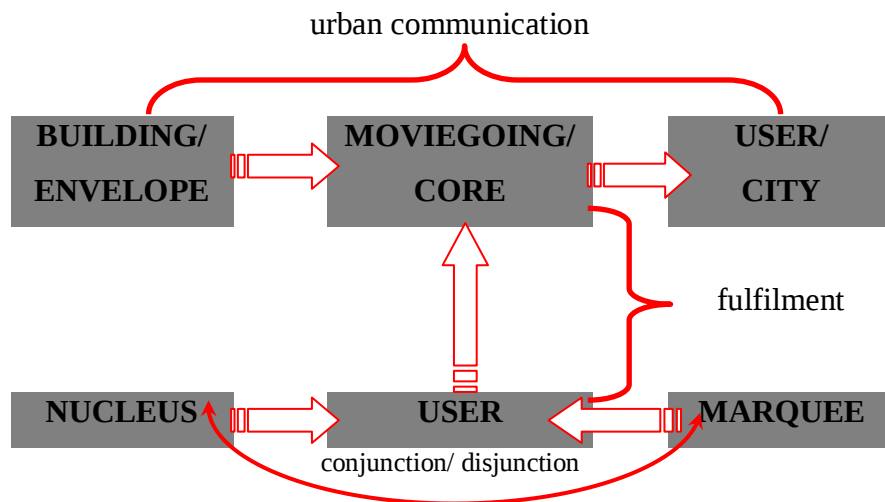


Figure 4.11 Actantial Model, as applied to the Eros Cinema, Bombay (after Greimas)

ACTANTIAL MODEL (after A J Greimas, 1966)			
SUBJECT	ACTANT	USER	desire
OBJECT	ACTANT	MOVIEGOING (CORE)	
SENDER	ACTANT	BUILDING (ENVELOPE)	knowledge (transmission)
RECIEVER	ACTANT	USER/CITY	
HELPER /ANTI-HELPER	ACTANT	VERTICAL DISCONTINUITIES	power
OPPONENT / HELPER (DISJUNCT CONJUNCT)	ACTANT	MARQUEE	

Table 4.5 Actantial Analysis of the Eros Cinema, Bombay (after Greimas)

4.8.3 Process Discontinuities

The various plastic configurations on the Object/building introduce discontinuities that are made evident by the plastic contrasts between the vertical and the horizontal. Formants are characterised by vertical dynamics and horizontal slowdowns and stoppages. Process discontinuities are articulated in the sub-processes of the nucleus and the sub-formants. The nucleus exhibits a series of vertical linear discontinuities that, in their dynamics, calls attention to itself. As a series of figural components, it acts as a welcoming device inviting the user into the building. Through the valorisation of the vertical axis and of the ground plane concavity that is the entrance off the street, the nucleus shows a heroic aspect to the street and the city.

The nucleus is discontinuously divided into the entrance, the shaft and the tower (which meets the sky). The entrance is also marked by signage in the case of an apartment or office building that boldly announces the building's identity. In a cinema house, the marquee (cinema hoarding) makes for an oppositional reading with the signage that communicates the core; semantically providing a counterpoint to the centrality of the nucleus.

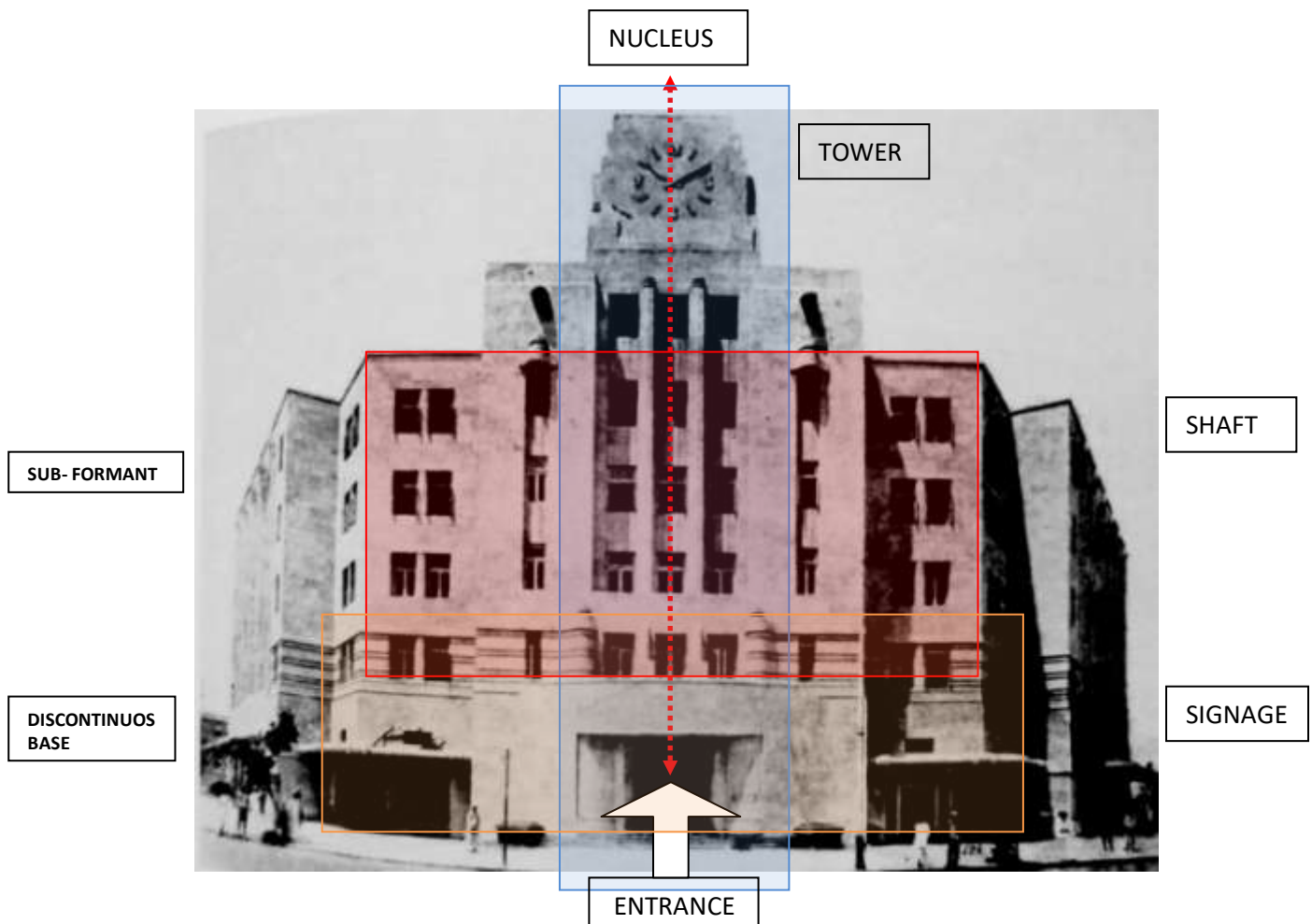


Fig 4.12 Process Discontinuities observed on the Industrial Assurance Office Building, Bombay

The shaft forms the vertical delineation that bears distinctive ornament, while the tower makes a definitive statement in the skyline, by incorporating isotopic elements (to be discussed later) for familiar readings by the city at large.

The sub-formants on either side of the nucleus form the larger part of the envelope that encloses the core of Object/building. These sub-formants form the underpinning for the foregrounding of nucleus (playing 'straight man' to the 'performer'). The underplaying of sub-formant is articulated in the functional and the everyday.

The horizontal bands that make the sub-formant are discontinuities arrayed as fenestration and climatic protection with a minimal ornament. They are made of simple parts combined in a complex way (by superimposition).

The envelope in Object/building sets up the climax of the nucleus on a corner plot creating an urban landmark that dominates the city square. This is clearly observed in the example of the Industrial Assurance Office Building, at Churchgate, Bombay, where the nucleus dominates a busy street intersection (See Figure above).

The ground plane serves the street with its many subsidiary accesses. The entire aspect of the sub-formant is therefore quotidian. Despite the apparent everyday aspect of the sub-formants, they serve an important urban function of establishing process continuities with sub-formants in other buildings. The buildings along Bombay's Art Deco precincts like the Oval or Marine Drive are dominated by the articulation of sub-formants. The horizontal elements of overhangs and balconies that make the envelope speak in one language, thus contributing to a coherent urban fabric of self-similarity.

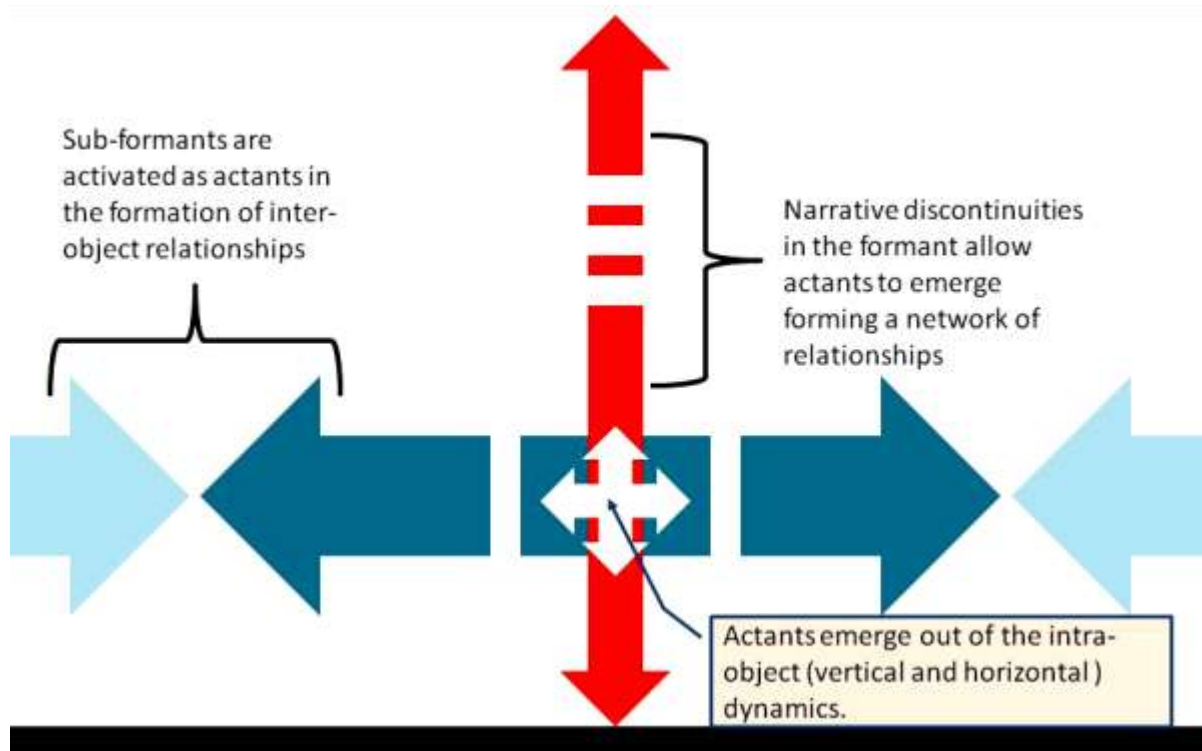


Fig 4.13 Vertical and Horizontal Dynamics

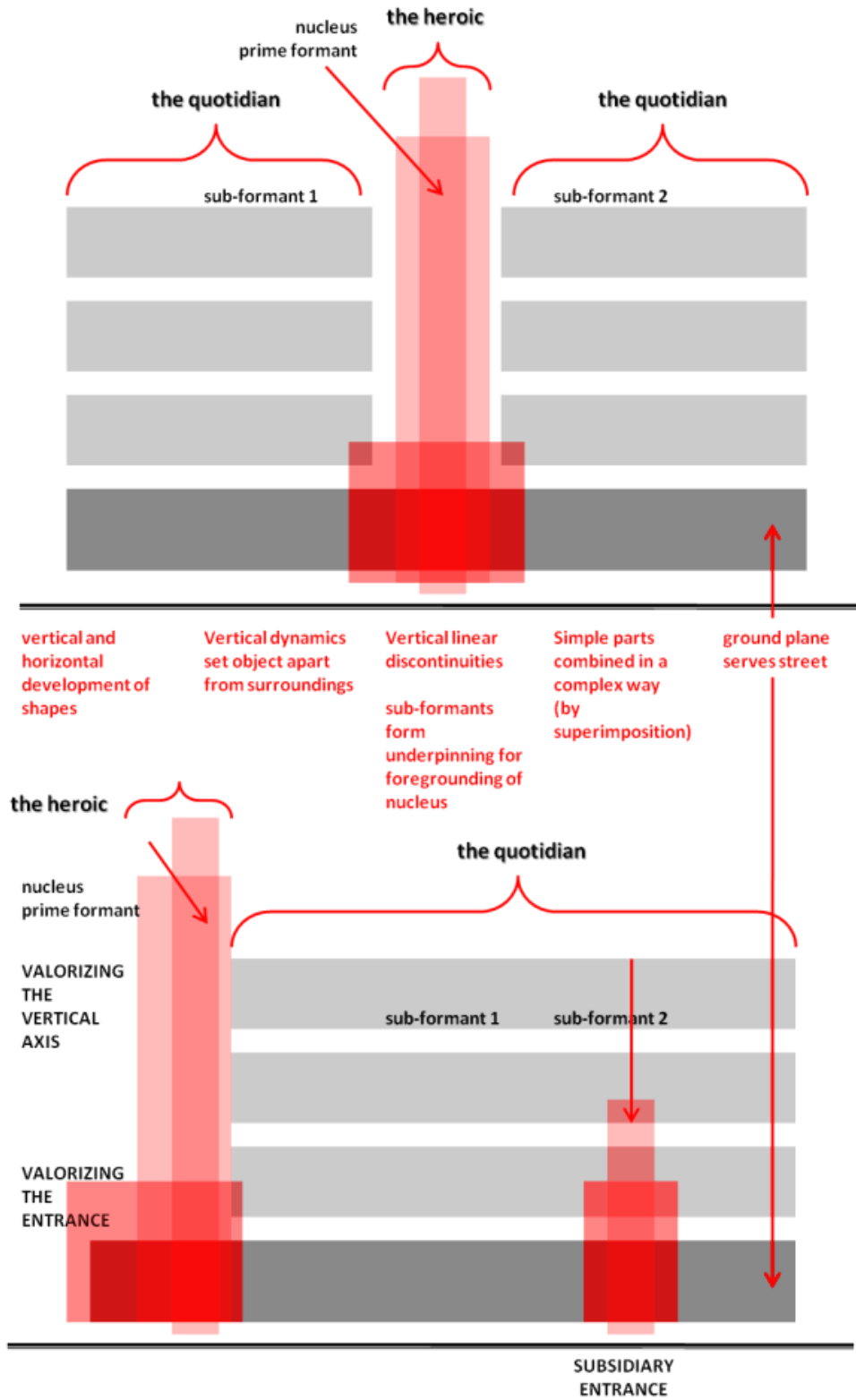


Fig 4.14 Process Discontinuities 1- The heroic and the quotidian

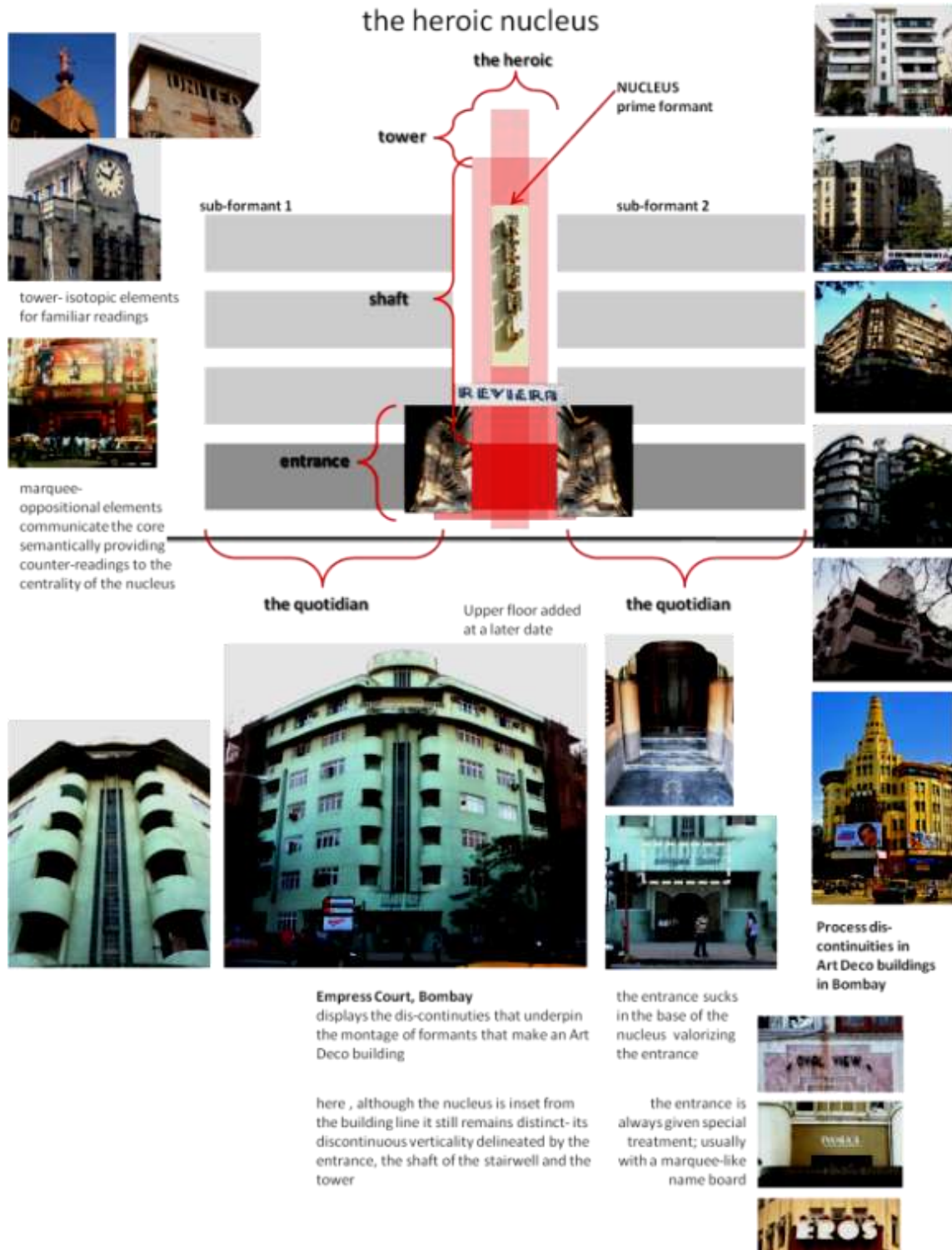


Fig 4.15 Process Discontinuities 2 The heroic nucleus

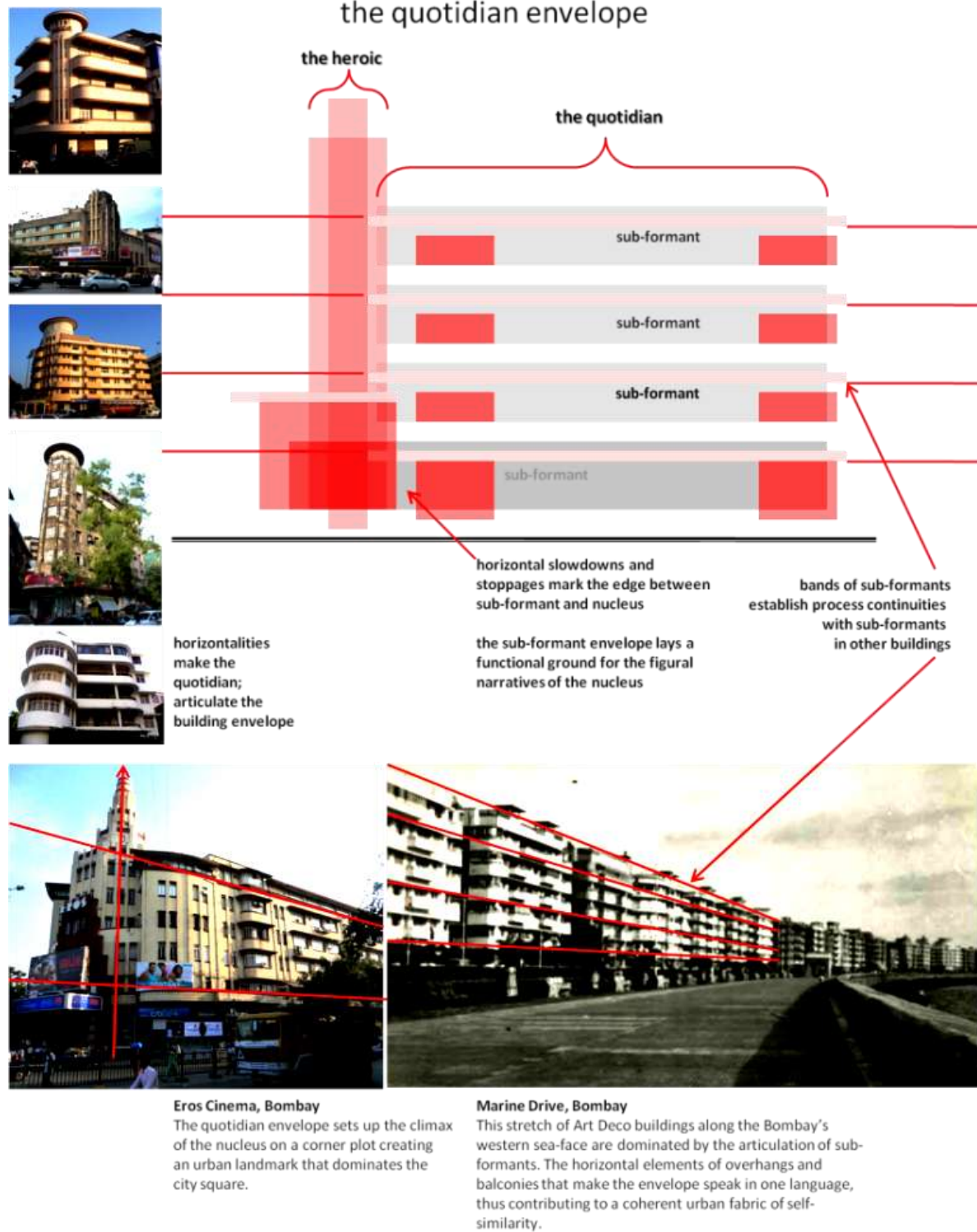


Fig 4.16 Process Discontinuities 3 The quotidian envelope

4.9 Superimpositions

Superimpositions on Bombay's Art Deco buildings can be read as thematic isotopy; manifested by several figurative semes or parts of ornament-signifiers, after Greimas (Hebert, 2009).

Their presence, apart from being conceptual agglomerations that give the Art Deco style its name, allow for the establishment of a level of familiarity as well as for a uniform reading or interpretation. Ornament forms a conceptual or thematic layer on the architectural articulation of these building, and has definite roles to play while delineating the formants. Elements of ornament (patterns, edges, cornices, panels, pinnacles, fenestration and so on) are figurative semes directly appreciated by the senses. Ornament as a generic theme derives forms the axiomatic ornament/ base binary. Isotopy is seen on the Object/buildings in the form of 'Enhancers' (abstract/geometric lines and shapes that provide a vertical or horizontal momentum to the various discontinuities, or sometimes bind them to form a singularity) and 'Nuancers' (figurative/iconic imagery that acts as standalone superimposed ornament). These are terms we have coined (in a separate paper) specifically for the appreciation and the identification of theses semes on the Object/buildings. (Dalvi, Expressions of Modernity: Semiotic Isotopy on Bombay's Backbay Reclamation Buildings, 2015).



Figure 4.17 Nuancers on the facade of Swastik Court, Oval



Figure 4.18 Enhancers on the facade of Soona Mahal, Marine Drive

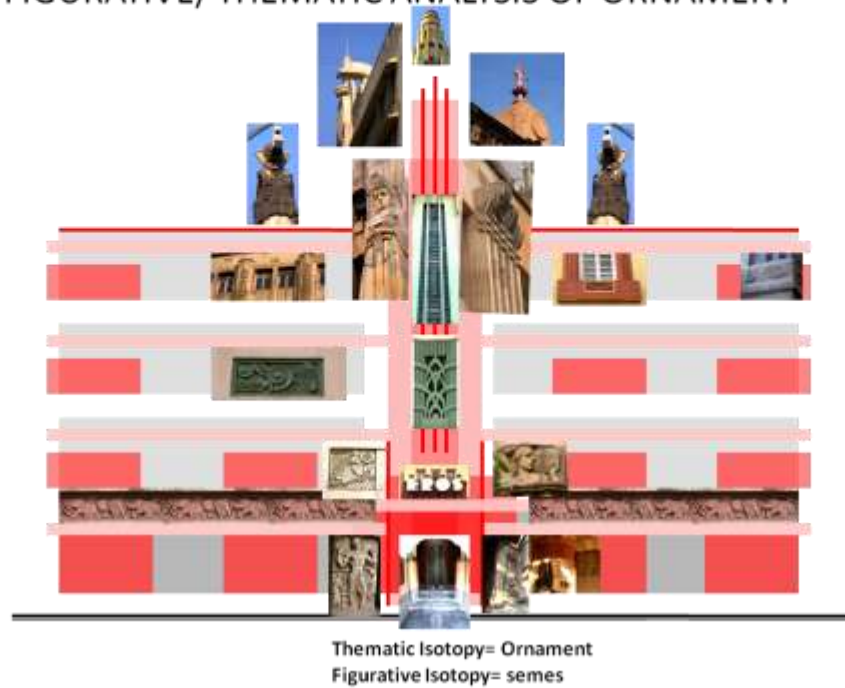
On a building, Nuancers or iconic semes form the best perceptual homonyms to a signifier, as the observer directly relates to the illusion of reality offered that evokes an immediate sensory response. On Art Deco buildings, the figurative iconic and the figurative semes are best seen as superimpositions on the nucleus and the formants respectively. Typically, iconic ornaments display a variety of thematic influences (local or world referents), as shall be described in later

chapters. These direct signifiers form manifestations of ‘theme-nucleus’ by isolating it from the entity of the object, allowing for independent readings of the core.

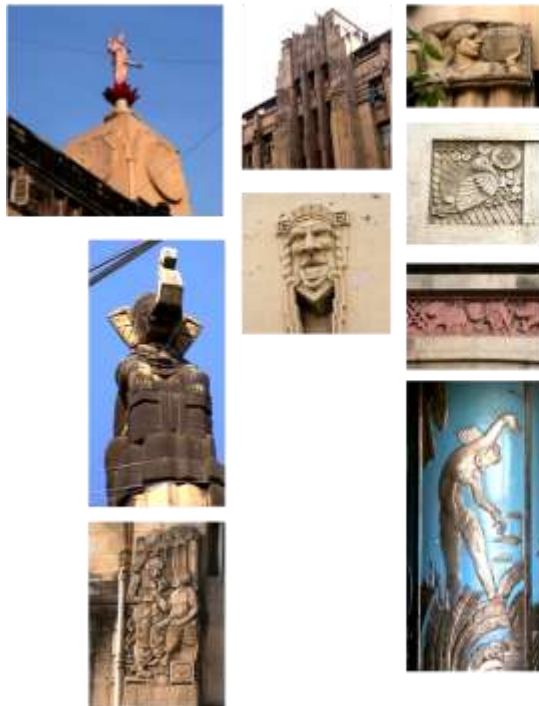
Abstract ornament or Enhancers, on the other hand, accentuate uniform readings of the sub-formants and play a more active role in creating narrative associations with sub-formants on other buildings alongside. The abstract semes form the warp and weft of the urban fabric, syntagmatically weaving them into a larger semantic. Isotopy, according to Greimas (1966) are “*a redundant set of semantic categories which make possible the uniform reading of the story*” (Hebert, 2009). On Art Deco facades in Bombay, the nucleus and sub-formants are architecturally rather than ornamentally dominant. Ornament, such as it is punctuates the architecture, but never foregrounds it. Redundancy, thus, offers modernist (and formalist, rather than semantic) readings of Bombay’s Art Deco (*Style Moderne*) buildings.

NARRATIVE ISOTOPY

FIGURATIVE/THEMATIC ANALYSIS OF ORNAMENT



ICONIC SEMES



ABSTRACT SEMES



Figure 4.19 Isotopy- Superimposed Nuancers and Enhancers on Art Deco Buildings

4.10 Inter-Objectual Relations in the Object/building

Inter-Objectual relations highlight how one object relates to other objects, both like itself and to the environment in which the object exists/operates. The directions these relations take are necessarily based on the intra-objectual relations within the object itself, which describe it and give it significance. The Object/building has, so far been deeply examined in terms of its *plastic configuration*, described in terms of its constituent *formants*, identified for *discontinuities*, analysed for the *figural elements* that give signification, its *core* related to its *envelope*, its *actantial* participation in a *narrative syntax*, all of which give a *signification* to the Object/building. If the choice of a cinema house, office building or apartment building as an exemplar in the larger semiotic of Art Deco architecture in Bombay is considered, then the intra-objectual relations describe above can be in turn metonymically applied to other objects too.

Beyond the object lies a network of relations that the object participates in. Beyond description lies meaning. If an object has to be seen as part of a semiotic space, it has to relate itself to the larger world, and interact with it in a coherent and meaningful manner. Inter-objectual relations have to be considered from the conception of the object as a touchstone. The Object/building then will have to be seen as a paradigm: placing itself in a relationship among other Object/buildings in Bombay, which can substitute for each other in the context of other ‘Art Deco’ buildings in Bombay and India, as can be seen in the network of relationships below where the Object/building takes a centre-stage.

4.11 Object/building and Art Deco Architecture (Bombay and India)

Unlike a paradigmatic study of a building type with another similar building (largely a study in contrasts), an Object/building within the set of Art Deco architecture in Bombay and India is a study in similarities. For despite the core (function) of Office Buildings or Apartment Buildings differing from say, a Cinema House, the envelopes display a degree of self-similarity that would allow them to be categorised within a set. The buildings in this study came from a much narrower time-band (1930-1949). The most commonly observed are plastic contrasts, vertical and horizontal dynamics, the nucleus, the discontinuities of nucleus, sub-formants, formants relating to other sub-formants, formants as actants, a self-similar narrative syntax of elements,

figurative formants defining core, simple parts combined in complex ways, superimposition, and juxtaposition. Several of these relations are nuanced, also almost never blurred. One can make a hypothesis- that Art Deco architecture is overt- both as the sum of its parts as well as figuratively. The core is expressed through the envelope.

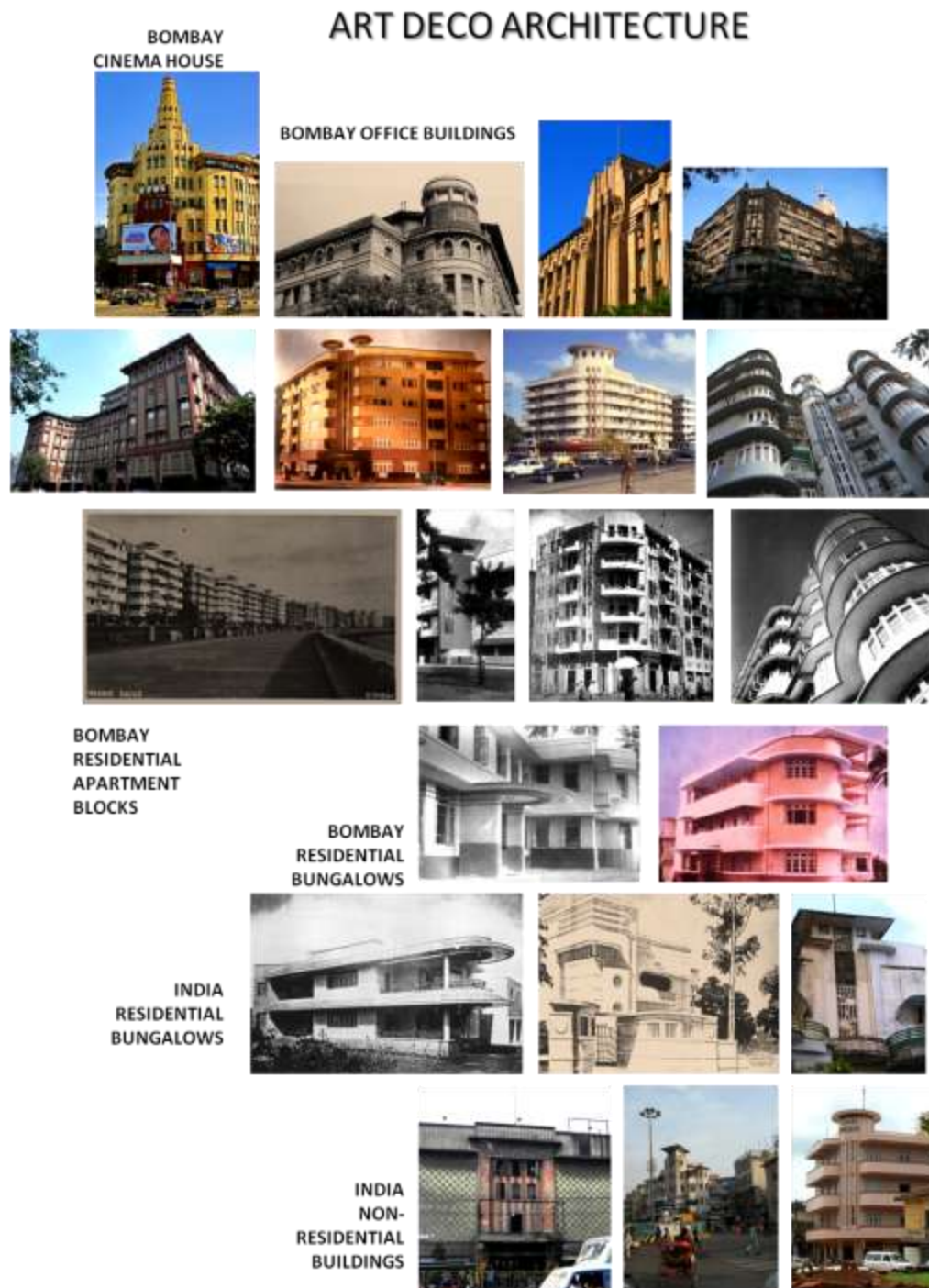


Fig 4.20 Various types of Art Deco buildings in Bombay and India as paradigms for Object/ building

While there is an obvious conformity in so many diverse building types being designed self-similarly, this kind of clustering also points to a signification beyond the obvious. Whether in apartment buildings, or office buildings, or in recreational buildings like cinema houses, the architecture of the 1930s and 1940s can be seen collectively as social facilitators. In the manner in which these objects/buildings are organised, one observes certain highlights that position them to induce attention. Other parts of the buildings (or indeed even buildings as a whole, as can be seen in the facades on Marine Drive) are understated. The highlights display parts deserving greater esteem in the eyes of the viewer (Emmison & Smith, 2004, pp. 112-113).

4.12 Art Deco architecture as ‘family resemblance’

Self-similarity, seen holistically, indicates a consistency of status, egalitarianism and cosmopolitanism that indexes the period itself, which saw a collective optimism in the rise of the middle classes, especially in Bombay, already the financial and cultural capital of the country. To paraphrase Ludwig Wittgenstein, a building may have a variety of usages: what these different usages have in common is a *‘family resemblance’*. There are overlapping and criss-crossing similarities.

Paradigmatically the building envelope rather than being directly interchangeable can be adapted and readapted in a variety of nuances, mimesis, conformity or even whimsy but follow ‘family resemblances’ that allow for a more graded categorization (as shall be seen later) than merely the compartmentalization of similar things into common shared properties (Athavankar, 1990, p. d6).

4.13 Determining ‘Art Deco-ness’

Is it possible, with the semiotic analysis of any Objects/building in its intra and inter-objectual attributes, to make a determination of what ‘Art Deco-ness’ is? What are the unique features that can, as metonymic categories, be used to observe other buildings from 1930-1949 in Bombay (for their inherent Art Deco-ness)?

Eleanor Rosch has proposed that in most objects, perceptual and functional features occur in unique ‘bundles’, giving them a certain amount of predictability. In most objects these ‘bundles of features’ make classification relatively easy. The human mind may even consider non-identical objects as equivalent and include them in the same category (Rosch, 1978). In our specific case, it is our endeavour to devise a set of tools that allows buildings from the period to be read using a bundle of features (or Basic Objects) that evolve from the constituent elements described earlier in this chapter. With this set of tools, all the buildings chosen (in our case cinema houses, office buildings and apartment buildings) from those built in the 1930s and the 1940s in Bombay (and India) can now be correlated to assess the proximity of their individual features to an exemplar.

At the very outset, we notice that these features are much less distinct than specific categories of preceding revivalist styles such as the Neoclassical or the Neogothic. This bundle of features is the core and other buildings will either be close to the centre or further away depending on the correlated features. This will create a graded structure that should have the following characteristics (Rosch, *Reclaiming Concepts*, p. 67):

1. Graded structure categories do not have clear-cut boundaries.
2. Many categories have no, and no category need have any, necessary and sufficient attributes which make an item a member of the category.
3. Items in a category are not equivalent with respect to membership but rather possess gradations of membership. People will assert directly that one member of a category is a better example of the category than another.
4. Graded structures are not formal systems nor are any items in a graded structure necessarily implicative or productive of any other items in the structure, nor need anything in a graded structure fill the role of substitutable strings of symbols. Graded structures and prototypes do not need to be modelled by a formal system, in order to exist.
5. Graded structures and prototypes, although they have default contexts, are otherwise flexible with respect to the ever-varying contexts of life situations.

We attempt to verify Rosch's theses by the observing whether other Object/buildings from the period can build up to an exemplar. We attempt to discern whether the proximity or distance therefrom is specific or fuzzy like a penumbra or a tail of a comet. We attempt to map the membership of a particular building in the larger category of 'Art Deco-ness' defined not by the boundary but by the core, and verify the assertion Athavankar makes, that although the boundaries represent discontinuities between concepts, they seem movable, suggesting a fair degree of flexibility (Athavankar, p. d6). Evaluated on their basis of closeness to the exemplar, individual objects get a 'goodness rating' or 'a degree of legitimacy'. Using our model and putting in as many examples as possible, we shall see if it is possible to analyse the typicality or a typicality of an individual building in terms of its closeness to an Art Deco ideal (pp. d7-d11).

Chapter 5 Developing Art Deco Exemplars

5.0 Introduction

Can the ‘language of the city’ be brought out of the purely metaphorical? Roland Barthes asks this question in his essay ‘Semiology and the Urban’, and asserts that to do so would be a ‘real scientific leap’. “It is probable”, he says, “that the procedures (of urban semiology) would consist in decomposing the urban text into units, then distributing these units in formal classes and thirdly, finding the rules for the combination and transformation of these units and models.” (Barthes, 2010, p. 168)

Every city possesses a kind of rhythm. Barthes refers to Kevin Lynch's conception that there exists in every city, "from the moment that the city is inhabited by man and made by him, the fundamental rhythm of signification, which is the opposition, the alternation and the juxtaposition of marked and of unmarked elements... Signification is experienced as in complete opposition to objective data." (p. 168) This challenging proposition is encountered when reading descriptions of a city and its architecture, which is largely perceptual, rarely objective and multifarious in its readings. To stay within the level of signification and not be carried away by the objective would entail having a set of methods that are fundamentally open ended and discursive, not weighed down under the burden of value systems, and elastic enough to interact with each other and the world at large while still holding their integrity in terms of their categories. In the case of our research, the search for Art Deco-ness in the architecture of Bombay resonates with this, for it is quite difficult to pin down.

Art Deco-ness, as discussed in the available literature on the subject leads us to the problem that the term clearly means many things to many people. For one, the phenomenon was worldwide (although some of the best examples clearly are from a smaller number of specific places). The buildings of Bombay (and outside Bombay, selectively) constructed during the period (1930-1949) can be seen as a semiotic resource available for observation and analysis. The inventories consist of examples of residential, commercial and cinema-house architecture, united by social imperatives and design traits. Even when discussed from the point of view of one specific place, in our case Bombay, several definitions are presented, based on social circumstances, or on architectural praxis, or on historical chronology. However, we put forward a proposition that Art Deco-ness can be discerned through an ahistorical process, by the deeper reading of the text- the buildings themselves.

This view finds mention in 'Art Deco 1910-1939' (Benton, Benton, & Wood, 2010), where the editors evoke the philosopher Ludwig Wittgenstein, who "offers a useful analogy for unravelling Art Deco in his concept of a 'family of resemblances' to explain the word '*games*'. Wittgenstein understood the meaning of words as 'a complicated network of similarities, overlapping and crisscrossing'. He pointed out that the word 'game' covers a range of usages that include

contradictions... and the very range of these meanings makes the word richer and more useful. Similarly, we might argue that the words ‘Art Deco’ are richer and more interesting for embracing apparently irreconcilable works...” (Benton & Benton, 2003, p. 16)

Michael Windover, in his book ‘Art Deco: a Mode of Mobility’ explains Art Deco as a mobility ‘of fashion’ that explains both ‘the variation in the style and why there has not always been consensus regarding what the term Art Deco encompasses’. He echoes Charlotte and Tim Benton’s problems of categorizing Art Deco as a style. To pull together the “large and heterogeneous body of artefacts whose sole common denominator seems to lie in their contradictory characteristics,” they usefully turn to philosopher Ludwig Wittgenstein’s explanation of the word “games” as a “family of resemblances.” Windover describes Art Deco as omnivorous and having a pragmatic dynamism. He quotes Adrian Tinniswood who sees it as “an evolving network of tendencies and motifs rather than a coherent movement with a leader, a manifesto, and an ideological program.” (Windover, 2011, pp. 17-18)

These positions contrast with the Saussurean, allowing for similarity rather than difference to populate bundles of features that in some (fairly undefined manner) constitute the entities themselves. While accepting their tentative nature, a model can be built up, nevertheless for those qualities that make up Art Deco-ness. Both Benton and Benton, and Windover allude to the possibility to finding meaning to Art Deco through Wittgenstein’s theories remain at that level and are not taken further. We attempt to do this, by transposing some of his concepts in the context of Art Deco architecture in Bombay.

Ludwig Wittgenstein, in his book ‘Philosophical Investigations’ (1953) describes certain categories of entities that may be related to each other by one essential common feature may, in actuality, be connected by a series of overlapping similarities, where no one feature is common to all. He describes this as the concept of ‘family resemblances’ and uses the example of games to explain it. He sees games as “a complicated network of similarities overlapping and crisscrossing; sometimes overall similarities, sometimes similarities of detail.” (Wittgenstein, 1986, p. 32) So, while there is no single property common to all that an entity refers to, like a family, there may be resemblances between various meanings of that entity. There are

similarities but no hard boundary conditions for an entity to be defined. Wittgenstein provides one more metaphor, that of a thread: “the strength of the thread does not reside in the fact that someone fibre runs through its whole length, but in the overlapping of many fibres.” (p. 32)

We perceive the same complication in describing Art Deco architecture, even at the level of a city because of its various expressions that differ from building type to building type, locality to locality and over time. Even within a locality or precinct, the expression of Art Deco facades undergoes subtle or overt changes depending on the location of buildings on the street- whether they are full frontally facing the street or are they located at a street corner with two or more elevations facing the street. The building facades display similarities that ‘overlap and crisscross’ and no two buildings are alike. We hypothesise that despite these variations members of the category ‘Art Deco’ may be related to one another without all the members having any properties in common that define the category ‘Art Deco’. (Lakoff, 1990, p. 12)

5.1 Basic Objects

Eleanor Rosch identifies a class of entities, called "Basic Objects," that she asserts are the most inclusive categories which delineate the correlational structure of the environment (Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976, p. 385). Basic objects are subsets of larger, super-ordinate object categories, and which have the following characteristics:

1. Members of basic object categories possess many of the same features in common
2. They are manipulated in similar ways
3. They have similar shapes
4. They can be identified by the average shape of the other members of the category
5. They are the most inclusive members of a category for which mental images of the category as a whole can be formed. (Finke, 1990, p. 68)

Shore (1996) elaborates Rosch’s conception of basic objects further:

1. Basic-level categories tend to be at a level of specificity intermediate between global inclusiveness and perceptual particularity.

2. Basic-level objects are easily rendered as simple gestalts, making them easy to identify and use as perceptual templates.
3. Children generally learn basic-level terms before they master more general or specific levels of categorization.
4. Basic-level categorization employs part-to-whole associations (synecdoche).
5. They serve as exemplar models for the identification of related objects, both more general and more specific.(p. 64)

In our research, paraphrasing Rosch, it is within the taxonomies of building facades that basic objects are structured such that there is generally one level of abstraction at which the most basic category cuts can be made.

While Eleanor Rosch's Basic Objects allude to complete objects, we have adapted her definitions to objects observed on building facades, i.e., architectural elements and isotopies, that occupy the level at which the most information is carried, and as such possess the highest cue validity, and are, thus, the most differentiated from one another. It is at the level of objects on the facade that the basic level of abstraction can be described both in general terms of cognitive economy and in the specific language of probabilistic cue validity (1976, p. 383). We choose this level to identify basic objects, as one level more abstract will be super-ordinate categories (apartment buildings, cinema houses, office buildings) whose members share relatively few attributes among each other. Superordinate categories have lower total cue validity than do basic level categories because they have fewer common attributes (1976, p. 384). The identification of the level of Basic objects allows us to include a larger group of buildings to seek family resemblances and to develop an exemplar to assess all the buildings in the inventory for proximity and distance.

5.2 Exemplars

Eleanor Rosch's paper 'Reclaiming Concepts' (1999) is based on her conception of prototypes and graded structures as Perceptual tools for classification and comprehension. Rosch's development of the concept of 'exemplar', used in this research as 'Central Member' is discussed in detail in Bradd Shore's book 'Culture in Mind: Cognition, Culture, and the Problem of Meaning' (1996). Shore explains how the exemplar is manifested best cases, metonymy, typicality, and basic-level Perceptual categories (p. 64).

Rosch describes the internal structure of a Perceptual model of categories thus: all members of a category do not have the same status within the category: some occupy a more central place while others are relegated to a less central or even a peripheral one (Finke, p. 68). She speaks of conceptual processes that work, not with precision of categorisation, but with a fuzzier strategy of placing similar objects together based on an example that fits that category the best. The judged 'best' examples of conceptual categories are called prototypes, that, far from being abstractions of a few defining attributes, seem to be rich, imagistic, sensory, full-bodied mental events that serve as reference points in all of the kinds of research effects (Rosch, 1999). Rosch describes these best examples as 'exemplars', which typify experiences by representing a best case or ideal version and become the model against which other similar experiences are matched. Object exemplars are often the basis on which people classify objects (Shore, 1996, p. 64).

Shore describes Rosch's conception of 'Exemplars' thus:

1. Exemplars are culturally salient instances of objects, people, or events.
2. Exemplars typify experiences for us in that they represent a best case or ideal version and become the model against which other similar experiences are matched.
3. Exemplars account for many of the prototype effects in human categorization where not all examples are considered equally good instances of a category.
4. Exemplars come in many forms.
5. Object exemplars are often the basis on which people classify objects. (p. 64)

We return to our Research Question:

Can the architecture of the period and location (Bombay, 1930-1949) be collectively mapped to identify a/n exemplar/s for that period and location?

The exemplar should display the 'rich, imagistic, sensory', attributes that Rosch describes. The example should metonymously represent all Art Deco architecture in Bombay. Given the conventional notions of Art Deco based on historical research, this example should express an architecture that is built in RCC, should have ornament in relief articulating the facade, should be built (preferably) in a reclamation scheme, should have an urban presence and (fashionably) express the glamour and aspirations of the rising middle class.

Given the above, our intention is to build a base of features (basic objects) explicated by the literature on the architecture of the period, of the place and of Art Deco as a larger construct. Most literature describes the features of Art Deco architecture, largely using the trope of ‘difference’, showing what it is as opposed to what it is not, a fairly classic Saussurean device.

We now compile a set of references from varied sources in the literature that ‘describe’ the features of the Art Deco as perceived by authors whose texts are as diverse as scholarly papers to popular guidebooks. Most authors describe Art Deco in terms of *simple gestalts, making them easy to identify and use as perceptual templates*. Our attempt is to generate keywords/ phrases that will populate the ‘basic objects’ at *a level of specificity intermediate between global inclusiveness and perceptual particularity* with which we will analyse the architecture of Bombay of the time.

5.3 Graded Structures

The literature shows us that the features are much less distinct than specific categories of historical styles or architectural elements. The bundle of basic objects form the core and other buildings will either be close to the centre or further away depending on the correlated features. This will create a graded structure that should have the following characteristics, according to Rosch (p. 67):

Graded structure categories do not have clear-cut boundaries.

1. Many categories have no, and no category need have any, necessary and sufficient attributes which make an item a member of the category.
2. Items in a category are not equivalent with respect to membership but rather possess gradations of membership. People will assert directly that one member of a category is a better example of the category than another.
3. Graded structures are not formal systems nor are any items in a graded structure necessarily implicatory or productive of any other items in the structure, nor need anything in a graded structure fill the role of substitutable strings of symbols. Graded

structures and prototypes do not need to be modelled by a formal system, in order to exist.

4. Graded structures and prototypes, although they have default contexts, are otherwise flexible with respect to the ever-varying contexts of life situations. (Rosch, p. 67)

Put into actual use, Rosch's theses will be observed when buildings from the period are correlated with the central member to form a continuum of proximity, sliding closer to or further away from the central member rather like a penumbra or a tail of a comet. We investigate whether the boundary conditions are fuzzy and open ended. Evaluated on their basis of closeness to the central member, individual members of that category may be seen to be 'better examples' of that category than others. Barthes reiterates the danger of fixing the signifieds. "We must never seek to fix and rigidify the signified of the units discovered, because, historically these signifieds are always extremely vague, dubious and unmanageable." (Barthes, pp. 171-172) This is a caveat we will attend to in designing our methodologies and methods of analysis.

5.4 Charting Family Resemblances: mining resources for basic objects to generate exemplars

We now turn to the available literature on Art Deco architecture worldwide and Art Deco architecture in Bombay. We seek definitions and descriptions as put forward by various authors and documenters from a variety of sources, from scholarly research papers to popular guidebooks. We mine these descriptions (which are by and large perceptual, and subjective to the authors and experts) to generate a list of key elements or 'basic objects' that together form a set of family resemblances, each not necessarily related to the other, but falling within the same category, a space of 'fuzzy' boundaries'.

Using this, we shall model 'central member/s' or 'exemplars'. The inventories of buildings we have earlier made (apartment blocks, commercial/office buildings and cinema houses) can then be correlated to the central member/s or exemplars for proximity and centrality.

5.4.1 Bevis Hillier

In ‘Art Deco of the 20s and 30s’ Hillier has attempted a clear (and now canonically accepted) definition of Art Deco: “An assertively modern style, developing in the 1920s and reaching its high point in the 1930s... a classical style in that, like neo-Classicism, but unlike Rococo or Art Nouveau, it ran to symmetry rather than asymmetry, and to the rectilinear rather than the curvilinear, it responded to the demands of the machine and of new materials... (and) the requirements of mass production.” (Hillier, 1968, p. 17) While substantially comprehensive in terms of chronological context, this definition immediately encounters several examples that do not fit, as, for example Art Deco buildings can be both asymmetrical and curvilinear.

In the 1920s, according to Hillier in “The Style of the Century”, the decorative arts became altogether more purposeful to match the new zeitgeist of society: “The decorative motifs of the 1920s- the fountain, spilling its waters prodigally, unrecantably; the carefree deer, gazelles and antelopes: the fawns and fauns; the borzois and salukis... Gave place to the more hard edge dynamic motifs of the 1930s, such as the zigzag of electric flash (...representative also of electric power and radio waves), stylised hair streaming in a neo-classical gale, and above all the sun ray, which appeared on almost anything from gramophone needle boxes to suburban garden gates. The last motif no doubt had its origin in the sun bathing, sun worshipping craze which began in the early 1920s... But the motif came to have a wider more political symbolism. It was the symbol of New Dawns (whether fascist or communist) and also evokes worthy 1930s hikers, the gambolling nordic nudes at Hitler youth camps, and the Nazi strength through the Joy movement (Hillier, 1998, p. 90).

5.4.2 Laxmi Bhaskaran

Bhaskaran in her survey of design trends summarises the key characteristics of Art Deco as having geometric stepped forms, bright colours, sharp edges, rounded corners, expensive materials, mass production materials. The products celebrate their new-found fascination for travel, speed and luxury. Art Deco graphic artists used vivid colours and flat angular shapes. In America, Bhaskaran says: “designers also sought inspiration from machines and industrial forms, adopting repeated and overlapping geometric patterns, colourful rectilinear images, chevrons and lightning bolts (symbolizing electricity), and the ubiquitous zig-zag designs.” (Bhaskaran, 2007,

pp. 86-87) Yet, at around the same time another significant American influence was that of Hollywood and its spirit of "...glamour, fantasy and escapism. Inspired by Hollywood film sets and fashions... Egyptian and Aztec influences and geometric styling dominated American architecture." (Bhaskaran, 2007, pp. 86-87)

5.4.3 Patricia Bayer

Bayer describes the Art Deco style in architecture as a distinctively urban construction: the exuberantly decorated, usually terraced, towering structure, (Bayer, 2003, p. 7), whose attributes include ornament, geometry, energy, retrospection, optimism, colour, light, and at times even symbolism. (p. 11) In contradiction to the attribute of 'retrospection', Bayer further states that "Art Deco architects were reacting against what had become the norm of Beaux Arts Neoclassicism, so they added distinctly Moderne (or simply modernised) elements to their classically based creations: stylised eagles and blossoms, bold sun rays, strings of zigzags, characters in contemporary dress on bas relief panels". In the immediate past, "the Mexican Revolution that began in 1910, further spread the appeal of ... stepped pyramids, deities in elaborate headdresses and costumes, stylised sun rays and dense patterns of circles, snakes, curlicues and geometric shapes." (p. 16)

Bayer also acknowledges the industrial and the international influence of modern transportation. In the nineteen thirties "the strong often streamlined forms of industrial design informed many a commercial structure... the large ocean going vessel... inspired Art Deco buildings of the streamline moderne variety.... with its portholes, promenade deck, ship's bridge and various other details...Elsewhere, throughout the world, especially in tropical coastal areas, nautical motifs appeared in profusion." (Bayer, 2003, p. 17)Streamlined, aerodynamic, thoroughly modern images were strongly expressive of increased opportunities in travel in the twenties and thirties. From sleek locomotives and gleaming automobile bodies to giant prowed ocean liners and bullet like drigibles, methods of modern travel conjured up a new vocabulary of images (p. 166). Bayer further describes commercial and office buildings as comprising of stepped masses of brick and stone, with a variety of decorative touches. (Bayer, p. 104)

5.4.4 Mario Gagliardi

Mario Gagliardi, in his paper 'From Signifier to Signified: Art Deco versus Functionalism' differentiates its paradigms in Europe, where it began and America where it was soon imported: "Art Deco remains a luxury style in Europe; it becomes ubiquitous in the US as soon as it meets mass production.

Art Deco glorifies 'modern times', it decorates, symbolizes and reaffirms contemporary world views, leaving nothing untouched." (Gagliardi, 2006) Gagliardi describes Art Deco as incorporating "everything that was en vogue at its time with superficial abstraction and a sense for pathos: Orientalism, Egyptian Art, Aztec and Mayan elements, Russian Constructivism, the fascination for technology and the worship of speed as shown by the Italian Futurists." (Gagliardi, 2006)

5.4.5 Judith Miller

Judith Miller reinforces the concept of Modernity as "the essential ingredient in all Art Deco production." (Miller, 2005, p. 9) Miller gives an alternative take on Gagliardi's idea of mass production and ubiquity: "Much post 1930s Art Deco is also influenced by the Depression and forced austerity; this is most visible in the American streamlined style and the use of inexpensive materials." (p. 13)

Judith Miller also includes the Aztec, the Inca and Native American influences on Art Deco geometric stylisation found in all forms of Art Deco, from jewellery to architecture as "an interpretation of Aztec, Inca or other native American iconography... The most popular icon related to this cultural trend is the sunburst, but many zigzag designs are also native American in origin." (Miller, 2005, p. 15)

Miami's Art Deco district was built from the 1920s to around 1940. Initially inspired by the architecture of the 1925 Paris Exposition, the buildings display angular clean lines, and strong vertical accenting. Decorative forms include geometric patterns, industrial symbols, traditional, Egyptian, American Indian and Maya motifs, and in some areas nautical imagery (Miller, 2005, p. 19).

5.4.6 Michael Windover

Michael Windover finds Mobility is “present on the very surfaces of Deco objects and architecture—in iconography and general formal qualities (whether the zigzag rectilinear forms popular in the 1920s or curvilinear streamlining of the 1930s). While mobility has consistently been a significant concern for architects and designers, the interest in it during the years between the wars mirrored the near obsession with speed and movement (both physical and social) popularly held at the time.” (Windover, 2011, p. 2) These kinetic impressions played out both on the surfaces and the forms of Art Deco buildings, indicating “the intense interest in mobility while framing spaces that became sites of public culture, nodes in vast networks of intersecting forms of mobility. This can be seen in iconography, which often referred directly to historic and modern forms of transportation and communication, as well as in the streamlined forms that characterized a good deal of design in the 1930s.” (p. 19)

5.4.7 The City of Miami Beach Workbook

The City of Miami Beach’s Workbook for students lists the following architectural features as means of identifying Art Deco-style buildings in Miami: glass block windows, porthole windows, racing stripes, ziggurat roof line, flag pole or finial, central vertical element, eyebrow, rounded corners, pipe railings, and aerodynamic design. (City of Miami Beach, Department of Historical Preservation and Urban Design, N D).

5.4.8 Navin Ramani

In the context of Bombay, Navin Ramani lists the following motifs used as tropes on many buildings: the frozen fountain (on building facades and metal grilles), streamlining, circular folds at corners, tropical imagery (stylised forms of ocean waves, sunburst rays, the moon, tropical flora and fauna were common motifs in façade bas-reliefs, metal balcony grilles, ornamental gates, porch railings and etched glass panels (Ramani, 2007, p. 88), Egyptian and Classical elements, nautical design features (seen as porthole windows, ship deck-style railings and observatory towers (p. 109), the influence of Indian tradition and mythology (scenes of toiling farmers, Hindu gods and goddesses, symbolic animals such as the elephant, and figures from Indian mythology were often integrated into façade reliefs (p. 118), ziggurats (terraced pyramids

with rapidly receding storeys) and zigzags (rhythmic ascent emphasizing verticality (p. 129), eyebrows (the cantilevered ledge located over the window), angles and grilles and architectural signage and lettering (taking on the streamlined elegance of the architecture an appearing in a variety of mediums (p. 150).

5.4.9 Amin Jaffer

Amin Jaffer extols the virtues of Bombay as the epitome of modernity, “reflecting it visually in its new architecture, whose elegant streamlined forms, sparse but potent ornament and machine aesthetic glamorised the new age and its technologies.” The stretch of buildings along the Marine Drive that came up in the 1940s shows a consistent uniformity that makes it one of Bombay few stretches now recognised as an Art Deco precinct. “The development of Backbay in a consistent architectural style resulted in a coherent Art Deco cityscape second in size only to Miami’s South Beach. Its buildings are all characterised by concrete construction, flat roofs and curved fenestrations.” (Jaffer, 2010, pp. 383-384)

5.4.10 Jon Lang

Jon Lang, in ‘A Concise History of Modern Architecture in India’ (2010) asserts that Art Deco office buildings (in Bombay) “were simpler than the cinemas and palaces and were visually closer to the modified classicism that was the norm for such buildings in the 1920s... All these buildings were international in character. Efforts were made to localise the Art Deco with referents to India.” Lang uses the example of the New India Assurance Building (1935) designed by Master, Sathe and Bhuta, with N G Pansare as the artist, whose strong vertical ribs have a monumental quality, appearing larger than it is. “Not only was the building modern in appearance, it was modern in its reinforced concrete structure. Horizontal projecting surfaces protect the building from the eastern and western sun.” (Lang, 2010, pp. 16-17)

5.4.11 Kamu Iyer

Kamu Iyer enumerates the features of Art Deco building facades of Bombay, to include “stair towers, motifs derived from objects or abstract symbols and expressed in surface

embellishments, mouldings and features seen in ships porthole windows, deck railings and observation towers” (2014, p. 99). Iyer points out the importance given to signage on the building fronts. Architectural lettering was an important component of Art Deco design. He also highlights Bombay’s buildings’ adaptation to its hot and humid weather: “Weather shades over windows and openings which curiously writers on Art Deco architecture the West call ‘eyebrows’ were included as important elements in the design,” Iyer notes that these ‘eyebrows’ called ‘chajjas’ in India were age old-devices to provide shade and protection to an opening whose shape and proportions were conditioned by the materials with which they were built. (p. 100) In the case of Bombay, ‘RCC made cantilevers possible, and chajjas and balconies could be shaped as will. Due to use of plaster on the building surfaces, the architect had an opportunity to experiment with a variety of texture, mouldings and shapes. The architects of these buildings accepted the embellishment of the facade as an important element of design. Surface embellishment extended to the corners of buildings as well. Some of the most significant architectural features on (mainly) apartment buildings were cantilevered verandahs or balconies that had decorative features. The flat profile of the buildings’ roof was associated with modernity. (pp. 103-105).

5.5 Generating Basic Objects

According to classical theory, categories have clear boundaries which are defined by common properties. They are uniform, defined by a collection of properties that the category members share. Thus *no member should be more central than other members* (Lakoff, 1990, p. 17). The classical approach does not reconcile the possibility that some categories may not have clear-cut boundaries, or that some categories may contain members that are related to each other by family resemblances. The fact that there can be one apartment building or a cinema house that is better than another does not follow from classical theory. Eleanor Rosch, through her theories of prototypes, exemplars and graded memberships upturned the traditional view. The ‘goodness-of-example’ is determined by positing an exemplar from which each member in that subcategory can be located.

Roger Brown, in his book ‘Social Psychology’ (1965) mentions that Brown observed that objects have many names, that of all the possible names for something in a category hierarchy, a

particular name, at a particular level of categorization ‘has a superior status’. Such ‘real names’ seem to be shorter and used more frequently, quoted in (Lakoff, p. 17). Descriptors for the identification of Art Deco features, seen in the literature quoted seem to follow this trait, often using the same words, including words from popular usage- ‘zigzag’ or ‘sunburst’, for example are repeatedly used. The frequency of usage leads to typicality that then metonymously represents Art Deco as a category.

As can be observed, there are no ‘clear-cut’ boundaries in the identification of objects. Individual objects identified are not necessarily sufficient to identify individual buildings that can be categorised as Art Deco, but provide an element in the perception of a template that can be identified as such. There is a possibility that some objects form a better example of the super-ordinate category of Art Deco than others. The authors we have studied assert this in their descriptions, where some ‘objects’ tend to be identified more easily than others- ‘zigzag’, for example, or ‘vertical accents’, or ‘curved balconies’. Culling the literature for Basic Objects has led us to generate the list below. It is an unsorted list, related only to the features suggested by the authors whose works were reviewed. Being unsorted it also remains value free, and non-hierarchical:

Hillier	Bhaskaran	Bayer	Miller	Gagliardi	Ramani	Windover
Modern	Stepped forms	urban	Aztec	En vogue	Frozen fountain	mobility
Symmetry	Bright colours	Exuberant	Inca	Superficial abstraction	streamlining	Zigzag
rectilinear	Sharp edges	terraced	Native American	Sense for pathos	Circular folds	rectilinear
Machine age	Rounded corners	towering	sunburst	Orientalism	Tropical imagery	Curvilinear streamlining
New materials	Expensive material	ornament	zigzag	Egyptian	Ocean waves	speed
Mass production	Travel	geometry	Great Depression	Aztec	sunbursts	movement
fountain	Speed	energy	Forced austerity	Mayan	moon	transportation

Deer, gazelles	Luxury	retrospection	Inexpensive materials	Russian Constructivism	Flora and fauna	Lang
borzoi	Chevrons	optimism	Vertical accents	speed	Bas relief	Flat roofs
saluki	Lightning bolts	colour		technology	Metal grilles	Curving windows
zigzag	Glamour	light	Bayer	Italian Futurism	Ornamental gates	Decorative motifs
Electric flash	Fantasy	symbolism	drigible	luxury	Egyptian	Sun rays
Stylised hair	Escapism	Moderne	locomotive	ubiquitous	Classical	Lightening burst
Sun ray	Hollywood	birds	automobile	Mass production	nautical	aeroplanes
Political symbolism		blossoms	Ocean liner	Modern times	Porthole window	Palm trees
		Sun rays	Aluminium spandrel	worldviews	Ship railing	2/3 storey
		zigzag	Ziggurat pilasters		observatory	Prominent stairwells
		contemporary	Cantilevered sunshade		Indian mythology	Curved verandahs
City of Miami Beach	Jaffer	Bas relief		Iyer	Toiling farmers	Terrazzo
Glass blocks	Modernity	Stepped pyramids		Flat roofs	Hindu gods	Brick
Racing stripes	Streamlines	deities		balconies	Terraced pyramids	plywood
finial	Sparse ornament	streamlining		cantilevers	zigzag	Modified classicism
Ziggurat lines	Machine aesthetic	Industrial design		eyebrows	eyebrows	international
Central vertical	New age			architectural lettering	grilles	Strong vertical
eyebrow	Technology			porthole	signage	monumental

				windows		
Rounded corners	Concrete construction			observation towers	High parapet	Indian references
Pipe railing	Flat roofs			surface embellishment	Cantilevered balcony	Horizontal projections
	Curved windows			abstract symbols		

Table 5.1 Compiling Basic Objects based on available literature

5.6 Basic Level Categorization

The formation of a Basic Level Categorization is necessary to generate exemplars for each of the sub-categories. Here, categories are not merely organised in a hierarchy from the most general to the most specific, but are also organised so that the categories that are Perceptually basic are ‘in the middle’ of a general to specific hierarchy. Generalization proceeds ‘upward’ from the basic level and specialization proceeds ‘downward’ (Lakoff, 1990, p. 13). In our case the super-ordinate levels are those of:

1. Formants, that allow for reading
2. Discontinuities, that allow for identification
3. Superimpositions, that serve the connotative function

The basic level objects fall in a stage lower than these more general locations, and populate the categories under the subordinate categories of functional and narrative formants, vertical and base plane discontinuities and superimpositions in the form of abstract and iconic isotopy.

We propose a template of Basic Objects based on formants, discontinuities and superimpositions. As seen in the table below, these can be used to discern ‘exemplars’ in all three sub-categories under study- apartment blocks, office, commercial buildings and cinema houses.

BASIC OBJECTS

BASIC LEVEL CATEGORIZATION

FORMANTS		DISCONTINUITIES		SUPERIMPOSITION	
ALLOW FOR READING		ALLOW FOR IDENTIFICATION		CONNOTATION/ REFERENT	
				ISOTOPY	
FUNCTIONAL	NARRATIVE	VERTICAL	BASE PLANE	ABSTRACT	ICONIC
		HORIZONTAL			

Table 5.2 Basic Level Categorization

5.6.1 Formants

We have previously seen how an entity derived from the plastic configuration of an object that outlines it as a singularity and, consequently, as an actant. A formant (or a sub-formant) highlights the internal relations, among parts, that constitute the object (Mattozzi, A Model for the Semiotic Analysis of Objects, 2007). Each entity (building) can be perceived as formants/actants, having a performative role with other sub entities in the building itself, as well as form the interface of interaction with buildings, spaces and users outside of themselves.

These actants form intra-objectual relationships (sub-formants) or have inter-objectual relationships with other entities. Earlier, our studies have focused on the syntagmatic aspects of how such buildings are put together into coherent entities, while paradigmatic aspects are considered in classifying them within the larger grouping of buildings chosen.

When formants are examined in the context of other formants that constitute the same body/object, they become actants that participate in the network of inter-objectual relationships that allow for comprehensibility. The Object/building thus becomes a (per)formant at a functional level, creating narratives out of the discontinuities of formants. Thus semiotic meaning can be extracted from these relationships.

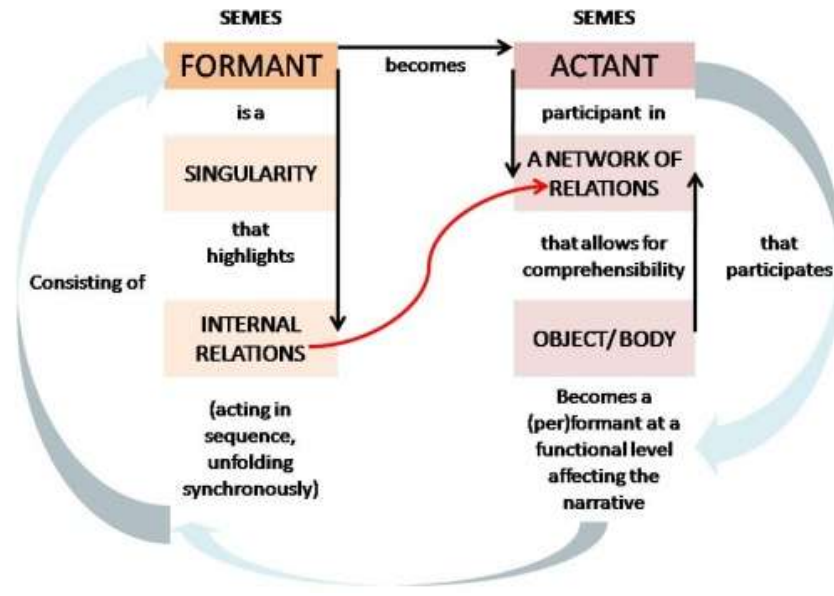


Figure 5.1 Formants and Actants on an Object/Body

For the building to be studied as a text, it is necessary to consider it to be an object/body with both inherence and imperative. Mattozzi assumes that an Object is a body; an object is an intersecting point in a network of relations; the object itself takes part in these relations and that other actors (objects) interact with it. This sets up a working chain of saliences, functionalities and narrative discontinuities. For the purposes of study these relationships are identified as occurring between formants that can be identified and isolated, and later put together to derive meaning from their inter-objectual and intra-objectual relationships.

5.6.2 Discontinuities

Discontinuities can also be seen as inter-objectual relations established with other 'like' buildings (Mattozzi, *A Model for the Semiotic Analysis of Objects*, 2007). An example of this is the following of the footprint of the building that is aligned with all other buildings on the street, or the alignment of floor planes with neighbouring buildings that leads to built or urban harmonies along the street.. In the buildings under study, vertical and horizontal elements chiefly form the objects of discontinuity. At an architectural level too discontinuities are expresses in the manner the base plane (the floor that connects to the ground) is usually differently detailed than the upper floors of a building.

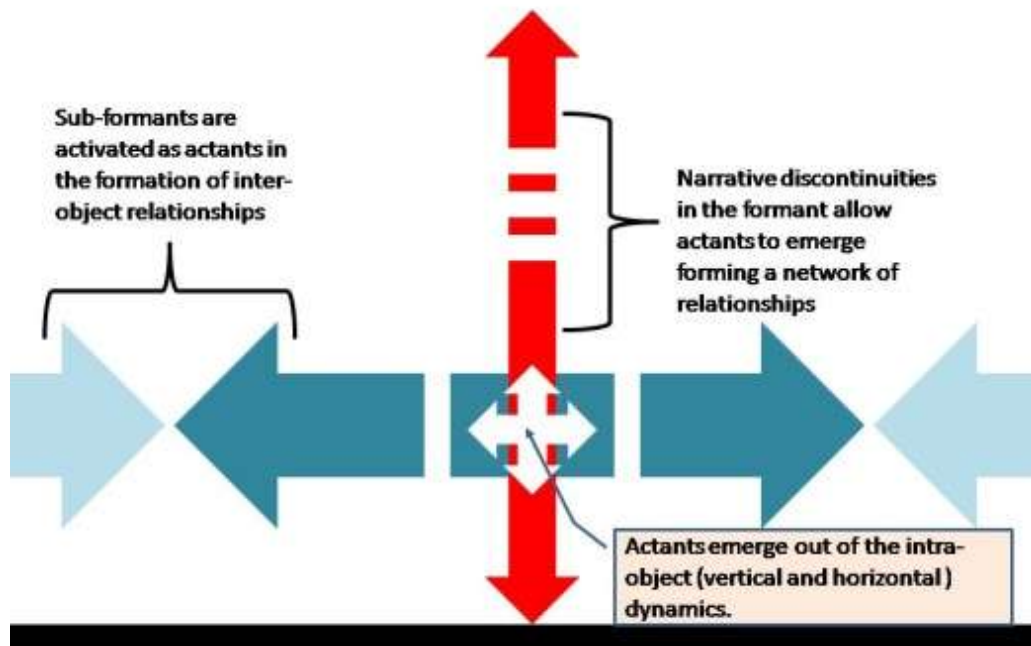


Figure 5.2 Formants/Actants and Discontinuities

5.6.3 Superimpositions

Superimpositions are the various forms of architectural ornament and building-art (murals, reliefs, etc.), especially found on the buildings of this period. These are seen in the form of abstract devices (zigzags, speed lines, chevrons) or iconic representation (humans at work, flora, fauna). Both are, by their very nature connotative, and narrative in nature. They are studied here in the form of ‘Isotopy’, a semiotic model developed by Greimas (Hebert, 2009). In a text or a narrative, an isotopy is a repetition of a basic meaning trait, or seme that establishes some level of familiarity within the story and allows for a uniform reading/interpretation of it. Building facades are best read through these isotopic tropes. They also form a series of referents that together locate the buildings as objects of their time.

In this manner graded memberships of these objects may be discerned, but these would be tentative agglomerations of relationship, and not subsets as in a Venn diagram. As Rosch describes them, “Graded structures are not formal systems nor are any items in a graded structure necessarily implicatory or productive of any other items in the structure, nor need anything in a graded structure fill the role of substitutable strings of symbols. Graded structures and prototypes

do not need to be modelled by a formal system, in order to exist.”(Rosch, p. 67) According to Athavankar, in most objects, perceptual and functional features occur in unique ‘bundles’, giving them a certain amount of predictability (after Rosch). These bundles show clear correlations making classification relatively easy. The human mind may even consider non-identical objects as equivalent and include them in the same category (1990).

We have now used the observable (not the abstract) to generate ‘exemplars’ for correlating for apartments/hotels, offices/commercial buildings and cinema houses in Bombay (1930-1949). In the table below, 35 Basic Objects have been identified, culled from the available literature, condensed for coherence and sorted based on Basic Level Categorization:

BASIC OBJECTS IDENTIFICATION					
FORMANTS		DISCONTINUITIES		SUPERIMPOSITION	
FUNCTIONAL	NARRATIVE	VERT/HORZ	BASE PLANE	ABSTRACT	ICONIC
Flat roofs	Stepped Forms	Tower	Prominent Entrance	Ziggurat	Relief/ Bas relief
Cantilevers	Bright Colors	Symmetry	Street Opening	Abstract Lines	Figurative Ornaments
Eyebrows	Balconies	Diagonal Symmetry	Mixed Use	Stucco Geometries	Speed/ Travel Motifs
	Streamlining	Shaft	Discontinuous Base	Grilles	Local Referents
	Monumental	Vertical Accents	Marquee	Compound Walls/ Gates	Hollywood Referents
		Vertical Fenestration	Signage		World Referents
		Vertical Mullions			
		Horizontal Accents			
		Horizontal Projections			
		Floor Bands			

Table 5.3 Basic Objects Identification

Most of the basic objects identified can be associated to apartment buildings, office buildings and cinema houses. While most of the features enumerated above can be generally seen in all types of buildings built during the period under study, certain features are more likely to be seen on specific building types. These are respectively culled from the 35 objects above.

5.7 The Relevance of Inventory

We attempt to observe the Art Deco buildings of Bombay (and outside Bombay, selectively) constructed during the period (1930-1949) as a semiotic resource available for analysis. These include examples of the architecture of cinema houses, apartment buildings and office buildings, united by social imperatives and design traits.

In social semiotics, resources are signifiers, observable actions and objects that have a theoretical semiotic potential constituted by all their past uses and all their potential uses and an actual semiotic potential constituted by those past uses that are known to and considered relevant by the users of the resource, and by such potential uses as might be uncovered by the users on the basis of their specific needs and interests (Kress & van Leeuwen, 1996).

To make an inventory, we first need a collection. As a first step we collect; document and systematically catalogue (inventorize) the following semiotic resources – including their history:

1. The Oval Maidan buildings, a product of the first Backbay Reclamation of the seafront along the western edge of Bombay. These buildings display a stylistic unity and are the product of just a few years of building activity.
2. The Marine Drive buildings, a product of the second Backbay Reclamation that would result in the completion of the Queen's Necklace seafront promenade in 1940. These buildings too came up on plots laid out along the seafront.
3. The Dadar-Matunga and Shivaji Park buildings, all residential that had been in development from the late 1920s as sites of the City Improvement Trust.
4. Other Residential buildings in different parts of Bombay built over the three decades under study, varying from upper class housing to mass housing to bungalows.

5. Bombay's Commercial buildings of the period, specifically those on the erstwhile Hornby Road, at Churchgate and the newly laid out Phirozeshah Mehta Road.
6. The Cinema Houses of Bombay, stylistically identified with 'Art Deco', built during this time that show consistent attributes in their architectural formants that could allow for uniform readings.
7. The buildings featured in 'The Modern House in India' (The Associated Cement Companies Limited, 1937), and 'The Modern House in India' (The Cement Marketing Company of India Limited (Publicity Department), 1942?) The publicity brochures consist of images of buildings built in a specific year from cities all over India and provide a synchronic inventory that can be read for/against itself.

The inventory of buildings and textual/pictorial documents are material artefacts that now constitute a semiotic resource, and it is therefore possible to extract its semiotic potential in the manner that it creates meaning. The development of a semiotic based on these resources have the potential to reveal the practices of the time dictated by a specific set of cultural practices and values, that regulate how those resources may have been read.

5.7.1 The Limitation of the Inventory

The inventory of buildings is in the form of photographs of the buildings in question.

Wherever possible, older images are preferred over more contemporary images, accepting the premise that over eight or so decades several changes in the buildings may have, to a greater or lesser extent, obscured many of the original details of the buildings. Images of full-frontal facades (supplemented by images of building details) are used for developing the semiotic resource.

It is understood at the very outset that this shall bring in an element of subjectivity and framing in the manner of the photos being taken. However since the study of buildings as text in the case of my research are limited to the study of the front facades of the buildings (which during that time were clearly fore-grounded, as opposed to the rest of the building), we believe that the

reliance on images is adequate for a complete understanding of the buildings in terms of our research.

5.7.2 The Inventory

5.7.2.1 Inventory CINEMA HOUSES

- i. Cinema Houses in Bombay
 - a. The Cinema Houses of Bombay, stylistically identified with ‘Art Deco’, built during this time that show consistent attributes in their architectural formants that could allow for uniform readings.
 - b. Cinema houses in Bombay both preceding 1930-1949 and following it.
- ii. Cinema Houses from the rest of India

20 BUILDINGS	
BOMBAY	REST OF INDIA
1. Eros	11. Delite, Delhi
2. Liberty	12. West End, Delhi
3. Regal	13. Filmistan, Delhi
4. New Empire	14. Regal, Delhi
5. Metro	15. Shola, Delhi
6. Diana	16. Elphinstone Picture Palace,
7. Aroura	Calcutta
8. Maratha	17. Raj Mandir, Jaipur
Mandir	18. Phul, Patiala
9. Minerva	19. Anna Malai, Madurai
10. Edward	20. Casino, Chennai

Table 5.4 Inventory- Cinema Houses

5.7.2.2 Inventory OFFICE BUILDINGS

- i. Office Buildings in Bombay: Bombay's commercial buildings of the period, specifically those on the erstwhile Hornby Road, at Churchgate and the newly laid out Phirozeshah Mehta Road
- ii. Office Buildings from the rest of India, most notably from Madras.

25 BUILDINGS		
BOMBAY	BOMBAY	REST OF INDIA
1. Citibank	9. HSBC	19. Oriental Building, Chennai
2. Indian Merchants Chamber	10. Bombay Mutual Life Assurance	20. Mysore Bank Building, Chennai
3. Industrial Assurance Building	11. Dhanraj Mahal	21. 12 Thambu Chetty Street, Chennai
4. Ismailia Bank Building	12. United India Building	22. Parry's, Chennai
5. New India Assurance	13. Express Building	23. Bombay Mutual Life Assurance, Chennai
6. Oriental Bank	14. Jeevan Prakash	24. United India Building, Chennai
7. Currimji House	15. ManeckjiWadia Building	25. The Mandovi, Panjim
8. SreepantBhavan	16. The Ritz	
	17. Kent House	
	18. Bank of India	

Table 5.5 Inventory Office Buildings

5.7.2.3 Inventory APARTMENT BUILDINGS

- i. Apartment Buildings of the Oval precinct
The Oval Maidan buildings, a product of the first Backbay Reclamation of the seafront along the western edge of Bombay. These buildings display a stylistic unity and are the product of just a few years of building activity.
- ii. Apartment Buildings of the Marine Drive Precinct
The Marine Drive buildings, a product of the second Backbay Reclamation that would result in the completion of the Queen's Necklace seafront promenade in 1940. These buildings too came up on plots laid out along the seafront.
- iii. Apartment Buildings of the Dadar-Matunga area
The Dadar-Matunga and Shivaji Park buildings, all residential that had been in development from the late 1920s as sites of the City Improvement Trust.
- iv. Other apartment buildings in Bombay

- v. Several examples of the inventories are apartment buildings featured in ‘The Modern House in India’ (The Associated Cement Companies Limited, 1937), and ‘The Modern House in India’ (The Cement Marketing Company of India Limited (Publicity Department), 1942?) These publicity brochures consist of images of buildings built in a specific year from cities all over India and provide a synchronic inventory that can be read for/against itself.

TOTAL 61 BUILDINGS, ALL FROM BOMBAY			
OVAL	MARINE DRIVE	DADAR/ MATUNGA	REST OF BOMBAY
1. Rusi Court/Court View	18. Chateau Marine	30. Abhyankar/ Ganesh Niwas	43. Ahmed Mansion
2. Fair Lawn	19. Framroze Court	31. Baroda House	44. Breach Candy House
3. Motabhoy Mansion	20. Ganga Vihar	32. Bhoj Mahal	45. Cambridge Court
4. Swastik Court	21. Keval Mahal	33. Ganesh Baug	46. DilPazir
5. Green Fields	22. Krishna Mahal	34. GianiManzil	47. Dreamland
6. Queens Court	23. Oceania	35. Hill View	48. Habib Court
7. Windsor House	24. Riviera	36. Khorshed House	49. Habib Flats
8. Sorab/Rajesh Mansion	25. Sea Green	37. MahadevBhuvan	50. Krishnabad
9. Empress Court	26. Shanti Kuteer	38. Mohan Manohar	51. Lentinage
10. Rajjab Mahal	27. Shreyas	39. Plot 579 Dadar Matunga Estate	52. Malabar Court
11. Shiv Shanti Bhuvan	28. Soona Mahal	40. Rao House	53. Marble Arch
12. Belvedere Court	29. Sunder Mahal	41. Raoji Sojpal Building	54. MooljiManzil
13. Oval View		42. Rigvedi Bramhan Niwas	55. Norman Haven
14. Palm Court			56. Normandie
15. Ivoryine			57. 83 Mohamed Ali Road
16. Sunshine			58. Ram Mahal
17. Moonlight			59. Residence, Altamont Road
			60. Sanghi House
			61. ShinghiBhavan

Table 5.6 Inventory Apartment Buildings

5.8 Semiotic Breakdown: creating a tool for working with inventories

The primary objective of using inventories as a semiotic resource in the context of this research is to create a semiotic for a ‘central member’. Most natural and intuitively developed categories do not necessarily have a defined boundary; but are often structured round a ‘good example’ which is treated as a central member and others as its non-central extensions around it (Athavankar, 1990, p. d6). The buildings from the inventory are catalogued and elements inventoried to locate such an ‘exemplar’.

In the case of the buildings of our inventory, the inter-objectual discontinuities are identified for their presence/ absence, and their relationship within the body/object, giving rise to salient and functional narratives, and with the overlay of figural/abstract isotopy that defines the buildings of the period. The buildings under study have these distinguishing characteristics that define their narrative syntax and ornamental schema. These buildings can be compared contrasted and studied for variations in narrative syntax, and analysed for conflation into a set of semiotic congruence.

Based on the nature of the buildings under study and earlier research done on the subject, a template of formants to be identified for semiotic breakdown is prepared. All the buildings in the can be thus inventoried for the presence/ absence of attributes. This hypothetical building can be considered an ‘exemplar’ for the purposes of research that every building can be measured against these collectively for the semiotic resource that shall be used for further analysis. The tool is formulated for this semiotic breakdown by considering each building in the inventory for salience, function and isotopy.

In ‘Reading Images: the Grammar of Visual Design’ Gunther Kress and van Leeuwen (1996) define visual salience as the way in which the elements in a visual composition are made to attract the viewer’s attention to different degrees because of the way they may be placed in the foreground or background, and/or because of relative size, contrasts in tonal value or colour, differences in sharpness, and so on. Their physical realization has a direct bearing on their semiotic potential. As an example we observe visual salience on the Metro Cinema House in Bombay, especially in its narrative discontinuities of its core. As can be seen in the table below:

 Advertisement for the Opening of Metro Cinema, Bombay (1938) Image Source: http://photos.cinematreaasures.org/production/photos/152414/1451943730/large.gif?1451943730	Elements forming the nucleus (Narrative Role)	Visual Salience
	TOWER	Landmark/ Visual cue identifiable from distance
	SHAFT (Actor)	Creates affinity at medium range; unveils intricacies of core/envelope; gives direction
	MARQUEE/ SIGNAGE (Actor)	Crucial signifier of core; dynamic; temporal; can attract or repel
	ENTRANCE	Clearly indicative; centripetal; crossover indicates fulfilment of narrative program by Subject

Table 5.7 Visual Salience and Discontinuities on the Metro Cinema, Bombay

Function can be defined as the set of attributes that make the building part of the visual fabric of the context they are in by establishing inter-objectual relation with the buildings adjacent to them and also providing a ground for the salience of the nucleus to be highlighted at an intra-objectual level. This can be seen in the horizontal discontinuities that form a counterpoint to the vertical dynamics of the nucleus; the manner in which the ground plane is served, the adaptation of

climatic devices (a particularly ‘Bombay’ feature) and the articulation of the façade using elements of streamlining.

The ornament/decoration on the buildings is studied as superimposed layer on both the nucleus and the sub-formants. Here Algirdas Greimas’ concept of Isotopy is invoked to identify architectural ornament (both figurative and abstract) on Bombay’s buildings as meaning traits (or semes).

1. The attributes relating to salience are: entrance, marquee/signage, tower and shaft.
2. The attributes related to function are floor (horizontal discontinuity), ground plane (street function), climatic devices and streamlining.
3. The isotopy to be mapped is abstract and figurative.

5.9 Developing an exemplar for Bombay’s Apartment Buildings

In Bombay, apartment blocks were built all over the city in the period 1930-1949. Several of the examples chosen for study come from three neighbourhoods, where the architecture of the facades displays a great degree of self-similarity. These are the Oval Maidan stretch, the Marine Dive stretch and the Dadar/Matunga precinct. Several other areas under the City Improvement trust also display features consistent with those above.



Bhoj Mahal, Matunga



Plot 83, Mohammed Ali Road



Green Fields, Oval

Figure 5.3 Apartment Buildings, some examples from the inventory

The images above show buildings from the Dadar/Matunga precinct, Mohammed Ali Road and the Oval Maidan stretch. These buildings show features that have affinities to apartment blocks of Paris where the ‘Art Decorated’ structures were largely style moderne by virtue of their ornament and not their forms, compared to the apartment blocks in New York which were soaring, stepped, turreted and had terraced masses. Apartment buildings in other American cities featured aluminium spandrels, with strong Moderne motifs ... with ziggurat pilasters and rounded balconies... (Bayer, pp. 79-80)

Jon Lang makes a summary of features that distinguish Bombay’s apartment buildings: “Art Deco houses and apartment buildings (in Bombay) have flat roofs, curving windows and a variety of decorative motifs. Favoured decorative patterns include sun rays, lightening bursts, aeroplanes and palm trees etched in glass or in metalwork or as bas reliefs... In two and three storey houses, the stairwells became prominent and ship-like with cylindrical forms, verandahs became curved. Materials such as terrazzo, glass brick and plywood came into vogue, cast iron fell into disuse.” (Lang, 2010, p. 13) Navin Ramani describes the imagery on the apartment buildings in the Backbay Reclamations in Bombay, borrowing “imagery from the new age, incorporating nautical details of steamship lines, aerodynamic designs of the car, train and airplane, influences from Egyptian and Classical art, Cubism, industrialism and Hollywood films.” (Ramani, 2007, p. 46) “The architecture also exhibits “flat roofs with high parapets, cantilevered balconies, geometric motifs and decorative schemes influenced by streamlined and tropical imagery.” (p. 54) The apartment buildings in Bombay come closest to those of the candy coloured tones of Miami’s beach hotels built contemporaneously, that had decorative motifs of racing stripes, stepped parapets, floral panels and porthole windows. “Most of Miami Beach’s Art Deco apartment buildings were flat roofed, straight or curved sided (sometimes both in one), two or three storey structures, many of the windows featured cantilevered sun shades... the decorations in general were not as plentiful as the hotels, but the myriad motifs their designers employed were the same, and collectively they comprise a rich designed litany derived from numerous sources including French, nautical, high style New York and indigenous tropical Art Deco.” (Bayer, pp. 79-80) However, in terms of scale Bayer points out that in the major metropolitan areas the designs of hotels, apartment buildings and even skyscraper office buildings are often all but indistinguishable (p. 81).

Most of the apartments inventoried in Bombay display characteristics typical of buildings that form the fabric of neighbourhoods that are placed along the same setbacks and are defined by similar compound walls. These buildings facades face the road frontally, often symmetrically, with both signage and a porch indicating the location of the entrance. The ground floor is usually designed to look different from the upper floors. The floor lines match those of the immediate neighbours, and the buildings top floors terminate at the same level.

In most buildings though, the ‘nucleus’ forms its own bundle of features (prominent entrance + signage + shaft + tower) as a chief formant that stands out against the buildings mass and also rises above the building line. When the building is located on a street corner, abutting two streets, this formant is normally placed on the diagonal facing the corner, while the building mass forms wings on each road. All the buildings display some isotopy, in lesser or greater degree, that can be read connotatively to be part of the larger narrative of all similar buildings in the city. The identification of Basic Objects related to Apartment Buildings/Hotels can be seen in the table following:

BASIC OBJECTS IDENTIFICATION APARTMENT BUILDINGS					
FORMANTS		DISCONTINUITIES		SUPERIMPOSITION	
FUNCTIONAL	NARRATIVE	VERT/HORZ	BASE PLANE	ABSTRACT	ICONIC
Flat roofs	Stepped Forms	Tower	Prominent Entrance	Ziggurat	Relief/ Bas relief
Cantilevers	Bright Colors	Symmetry	Discontinuous Base	Abstract Lines	Figurative Ornaments
Eyebrows	Balconies	Diagonal Symmetry	Signage	Stucco Geometries	Speed/ Travel Motifs
	Streamlining	Shaft		Grilles	Local Referents
		Vertical Mullions		Compound Walls/ Gates	World Referents
		Horizontal Accents			
		Horizontal Projections			
		Floor Bands			

Table 5.8 Basic Objects Apartment Buildings

5.9.1 Example: Rusi Court, Oval Maidan

An example of an apartment block seen here is of Rusi Court on the Oval Maidan, where formants, discontinuities and superimpositions have been indicated. Here, the building lines and setbacks harmonize with those of the neighbours. It is on the formant that the ornament occurs, especially here, the motif of the frozen fountain. However on the first balconies from the ground which are designed differently from the upper floors, specially created reliefs depicting birds and foliage are embedded in stucco ornament.



Figure 5.4 Rusi Court- Formants



Figure 5.5 Rusi Court- Discontinuities and Superimpositions

5.9.2 Exemplar for Art Deco Apartment Buildings

We have therefore used the ‘bundles of features’ above to delineate an **exemplar** for facades of Art Deco apartment buildings/hotels in Bombay designed during the period 1930-1949 in the statement that follows:

“An exemplar for the façade of an Art Deco Apartment building/ hotel would be a symmetrical, stepped formed (ziggurat-like) structure of two to four storeys built using the technology of Reinforced Cement Concrete, and finished with factory made materials like cement/stucco plaster, glass, terrazzo, aluminium, etc. It would display the possibilities of RCC technology in its flat roofs, eyebrows and cantilevers and also in the nucleus. Its horizontal projections and balconies would clearly identify discontinuous floor bands and protect against the tropical weather conditions of Bombay. The ground/ base plane may be rendered differently from the upper floors, while the floor bands would form continuities with adjacent buildings. Buildings would be setback in a plot lined with ornamental compound walls and gates, while windows would have ornamental metal grilles.

The building would be coloured in bright or pastel shades and be frequently organized around a central formant or nucleus that would display such discontinuities as a prominent entrance, signage, shaft, vertical fenestration and culminating in an identifiable tower presented to the skyline.

The building would be articulated with one or two levels of superimposed/embedded ornament- the first in the form of abstracted lines and geometries in stucco signifying speed, travel or cultural references to the modern age; while the second would be figurative ornament, mostly in bas-relief depicting motifs from world / local referents.”

5.10 Developing an exemplar for Bombay’s Cinema Houses

Cinema Houses define the one typology that can be considered the leitmotif of the Art Deco era. According to Jon Alff, “Art Deco cinema embodied the modern elegance and comfort depicted in films, but otherwise unavailable to most Indian audiences. Movie viewers experienced

uniquely Modern perceptions as they were introduced to lives socially and culturally removed from their own.” (Alff, 1997, p. 251) These ‘palaces of entertainment’ are the most recognisable of all the Art Deco buildings, and as such, are rich in signification.

According to Bayer these purpose built structures (cinema houses) were built lavishly in the twenties but got streamlined in the thirties. (Bayer, p. 144). The cinema house was an international icon and had as common features “a vertical element: a towering pylon, parapet or other latter-day obelisk that stood out like a lighthouse's beacon” (p. 152). Later the rectilinear moderne cinema and theatre, with hardly a curve on its angular exterior, became another international type. (Pg.161)



Aurora



Metro



New Empire

Figure 5.6 Cinema Houses, some examples from the inventory

Cinema theatres in Bombay are located on sites in prominent, highly visible locations. “All were mixed use urban buildings, but their entertainment components were the most prominent both in terms of bulk and in aesthetic expression. Each stressed the vertical in design, each has back-lit marquees and each was designed to be seen at night as much as during the day.” (Lang, 2010, p. 16)

Cinema Houses, in Bombay, follow significantly the ‘traditions’ of Art Deco cinema houses as seen in other parts of the world. Here, they stand out because of their iconic and significant locations in different parts of the city. To a very large extent, they are located at street corners, facing to roads, with their formants at a diagonal. They are rarely enclosed in plot with a compound wall and rise directly off the public street.

The Basic Objects related to Cinema Houses can be seen in the table following:

BASIC OBJECTS IDENTIFICATION CINEMA HOUSES					
FORMANTS		DISCONTINUITIES		SUPERIMPOSITION	
FUNCTIONAL	NARRATIVE	VERT/HORZ	BASE PLANE	ABSTRACT	ICONIC
Flat roofs	Stepped Forms	Tower	Prominent Entrance	Ziggurat	Relief/ Bas relief
Cantilevers	Bright Colors	Symmetry	Street Opening	Abstract Lines	Figurative Ornaments
	Streamlining	Diagonal Symmetry	Mixed Use	Stucco Geometries	Speed/ Travel Motifs
		Shaft	Discontinuous Base		Local Referents
		Vertical Accents	Marquee		Hollywood Referents
		Vertical Fenestration	Signage		World Referents
		Horizontal Accents			
		Horizontal Projections			

Table 5.9 Basic Objects Cinema Houses

5.10.1 Example: Liberty Cinema, Bombay

An example of Cinema house seen here is of Liberty, where formants, discontinuities and superimpositions have been indicated. As is evident, the nucleus forms the dominant feature both physically as it rises out to form the skyline and also connotatively, as it has musical (piano keys) motifs prominently embedded on it. There are lesser formants on the side indicating entrances and stairways to parts of the building that are unrelated with the cinema. The ground floor is made to meet the street forming a large canopy, while the upper floors express themselves as in conformity with office buildings, as this the Liberty is a mixed use building.

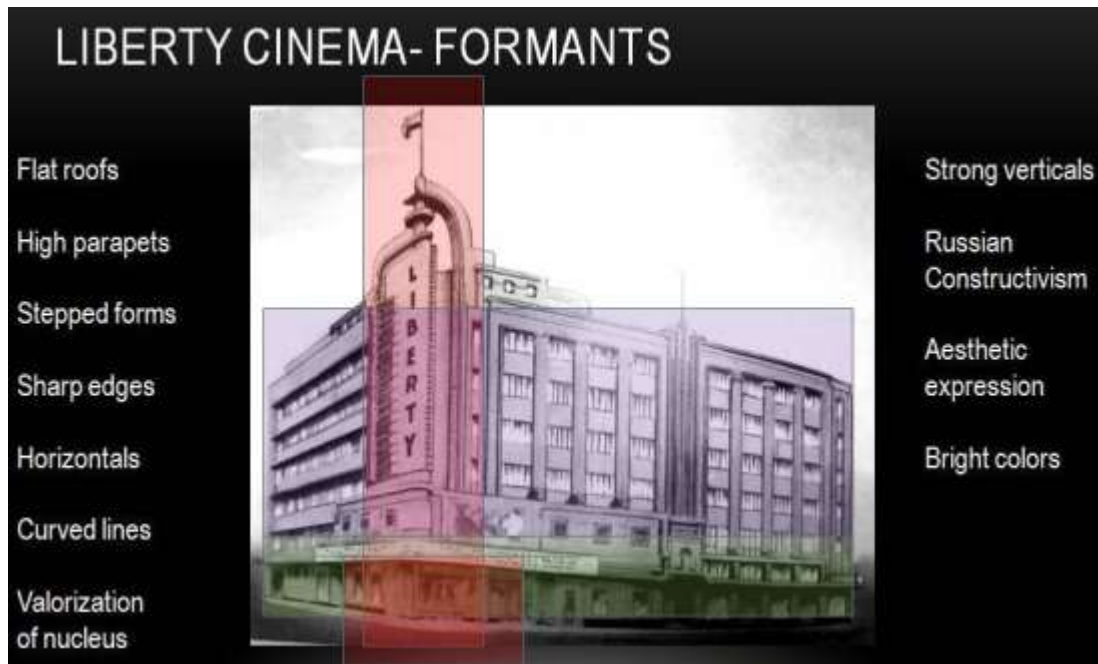


Figure 5.7 Liberty Cinema- Formants



Figure 5.8 Liberty Cinema- Discontinuities and Superimpositions

5.10.2 Exemplar for Art Deco Cinema Houses

“An exemplar for an Art Deco Cinema House would be located at prominent sites (mostly corner plots) and form symmetrical or asymmetrical masses of stepped forms (ziggurat-like) built using the technology of Reinforced Cement Concrete, and finished with factory made materials like cement/stucco plaster, glass, terrazzo, aluminium, etc. It would display the possibilities of RCC technology in its flat roofs, its verticals and cantilevers and especially in its exaggerated format/nucleus. Its horizontal projections and vertical mullions would form discontinuities. The ground/ base plane may be rendered differently from the upper floors, and display mixed use, relating and opening directly onto the street. Corner cinema houses would display heightened iconic forms and form diagonal symmetries along the two streets that they abut.

The cinema house would be brightly coloured and be organized around a dominant, central vertical, and display discontinuities in the nucleus like prominent entrance, marquee, signage, vertical fenestration, culminating in an identifiable tower/beacon presented in the skyline.

The building would be articulated with one or two levels of superimposed ornament- the first in the form of abstracted lines and stucco geometries in signifying speed, travel or world cultural references; while the second would be figurative ornament, mostly in bas-relief depicting motifs from Hollywood, world culture or local referents.”

5.11 Developing an exemplar for Bombay’s Office Buildings

Bayer describes commercial and office buildings as comprising of stepped masses of brick and stone, with a variety of decorative touches. (Bayer, p. 104)



Indian Merchants Chambers



Citibank (Bombay Mutual)



New India Assurance Building

Figure 5.9 Office Buildings, some examples from the inventory

“Art Deco office buildings (in Bombay) were simpler than the cinemas and palaces and were visually closer to the modified classicism that was the norm for such buildings in the 1920s... All these buildings were international in character. Efforts were made to localise the Art Deco with referents to India.” Lang uses the example of the New India Assurance Building (1935) designed by Master, Sathe and Bhuta, with N G Pansare as the artist, whose strong vertical ribs have a monumental quality, appearing larger than it is. “Not only was the building modern in appearance, it was modern in its reinforced concrete structure. Horizontal projecting surfaces protect the building from the eastern and western sun.” (Lang, 2010, pp. 16-17)

BASIC OBJECTS IDENTIFICATION OFFICE BUILDINGS					
FORMANTS		DISCONTINUITIES		SUPERIMPOSITION	
FUNCTIONAL	NARRATIVE	VERT/HORZ	BASE PLANE	ABSTRACT	ICONIC
Flat roofs	Stepped Forms	Tower	Prominent Entrance	Zigzag	Relief/ Bas relief
Cantilevers	Streamlining	Symmetry	Street Opening	Abstract Lines	Figurative Ornaments
	Monumental	Diagonal Symmetry	Mixed Use	Staccato Geometries	Speed/ Travel Motifs
		Shift	Discontinuous Base		Local Referents
		Vertical Accents	Signage		World Referents
		Vertical Fenestration			
		Vertical Mullions			
		Horizontal Projections			

Table 5.10 Basic Objects Office Buildings

5.11.1 Example: United India Assurance Building



Figure 5.10 United India Assurance- Formants

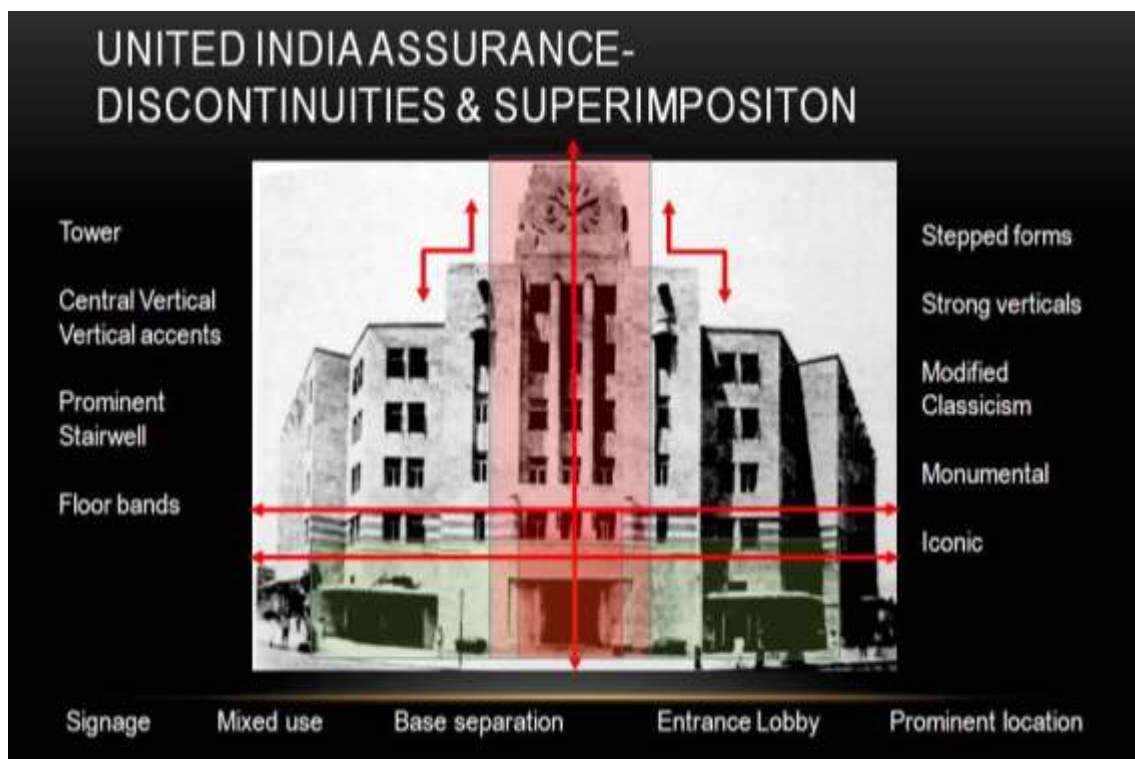


Figure 5.11 United India Assurance Discontinuities and Superimpositions

Office/ Commercial buildings share more affinities with cinema houses than apartments/ hotels. Their facades are designed more for display, than function. The verticals are more dominant on office buildings, on occasion obliterating the horizontal floor lines so easily associated with the sub-formants on the buildings under study. This is seen to a certain extent in the United India Assurance Building, seen above.

The dominant verticals on the façade also indicate the use of air conditioning in offices of that time, necessitating that windows remain largely closed, and therefore unprotected. Monumentality, the other important feature of office buildings is seen in the stepped façade, that rises ziggurat like, until its climax in a tower or turret that breaches the skyline. The clock-face, as is seen in the example below is a common feature connotative of discipline and professionalism.

In other examples iconic isotopy can be seen in the form of representative murals of Indian labour or other pursuits. In many cases, the use of stone as an outer facing material makes the office building different from the apartment block which is almost always finished in plaster.

Similar features are seen in other examples of office buildings. While in most cases they dominate their locations by rising over the intersection between two streets, they sometimes subvert the horizontal uniformity of building lines even if they are placed frontally on one street only, as is seen in the New India Assurance Building at Kala Ghoda. In general office buildings are spread all over the business areas of Bombay, except for streets like Pherozeshah Mehta Road and Veer Nariman Road, which were created the time to be predominantly office areas.

5.11.2 Exemplar for Art Deco Office Buildings

“An exemplar for an Art Deco Office or Commercial building would be a symmetrical or asymmetrical displaying a monumental character of stepped (ziggurat-like) forms built using the technology of Reinforced Cement Concrete, and finished with dressed stone or factory made materials like cement/stucco plaster, glass, terrazzo, aluminium, etc. It would display the possibilities of RCC technology in its flat roofs, vertical mullions and cantilevers and also in its formant/nucleus. Its horizontal projections and vertical mullions would form discontinuities. The ground/ base plane may be rendered differently from the upper floors, and display mixed use, relating and opening directly onto the street. Corner office buildings would display heightened iconic forms and diagonal symmetries along the two streets that they abut.

The building would be organized around a central vertical, and display discontinuities in the nucleus like a prominent entrance, signage, vertical fenestration and shaft culminating in an identifiable tower presented in the skyline.

The building would be articulated with one or two levels of superimposed ornament- the first in the form of abstracted lines and stucco geometries in signifying speed, travel or world cultural references; while the second would be figurative ornament, mostly in bas-relief depicting motifs from world culture or local referents.”

5.12 Inferences

By generating exemplars for apartment buildings, cinema houses and office buildings, the following inferences can be made:

By studying the available literature on Art Deco for determining basic level objects, it is evident that, seen together, several features elucidated by the authors reinforce each other and constitute clusters that function as mental reference points for categorization. It is especially interesting that writers on Art Deco worldwide as well as on the architecture of Bombay during the period under

study use, by and large, a common vocabulary, and many of the same phrases when describing its features.

In our preliminary research, we posited an exemplar using an actual building as a concrete instance of the category ‘Art Deco’ - the Eros Cinema in Bombay. We became aware of the limitations of choosing existing buildings as exemplars, both in itself, as well as for the three sub-categories we have subsequently identified. While Eros is certainly a good example of Art Deco of the period, it cannot be said to completely encompass all the features that make the sub-category of cinema houses in Bombay. Our exemplars are therefore generated on a summary representation that uses a ‘bundle’ that includes all relevant ‘features’.

In the larger category of ‘Art Deco architecture in Bombay (1930-1949)’, sub-categories of apartment buildings, cinema houses and office buildings have been identified. Inventories for each have been created, populating each sub-category with members. The members display, ‘family resemblances’ - the idea that members of a category may be related to one another without all the members having any properties in common that define that category (Lakoff, 1990, p. 12).

The above can be explained by observing, even at a glance, that apartment buildings vary significantly in their features. The Marine Drive buildings for example are, in many cases, stripped of narrative and abstract isotopy. In many cases, discontinuities of the formant/nucleus are vestigial. However they find inclusion in the sub-category due to their self similarity, as observed in the bundle of (35) features. In contrast, the Oval Maidan buildings are ornate and display superimposed isotopy to a very large degree. In this they display greater affinity with the office buildings on Pherozeshah Mehta Road and the Cinema houses.

Buildings included in a sub-category are not equivalent with respect to membership but rather possess gradations of membership. One member of a sub-category can be seen as a better example of that sub-category than another. This concept of centrality will be explored in the next chapter to allow for a body of graded memberships to be created.

Now that exemplars are generated, the inventories that have members under these sub-categories can be activated to create a set of graded memberships. This will be done by comparing each individual member to the exemplar in that sub-category. The member with the greatest affinity to the exemplar will become the ‘central member’. Those members with lesser affinity shall be graded at a distance from the central member.

Chapter 6 A Semiotic Mapping of Bombay's Art Deco Architecture (1930-1949)

6.0 Introduction

In Chapter 5 we derived exemplars for Bombay's Art Deco Cinema Houses, Office buildings and Apartment buildings⁴ using a bundle of features comprising of Basic Objects. In this Chapter we map these features on the facades of Cinema Houses, Office buildings and Apartment buildings from the identified inventory to make a semiotic appreciation of Art Deco facades. All the buildings are examined for the presence/ absence of attributes for formants, discontinuities and superimpositions. By doing so, the buildings in our inventory can be compared with the hypothetical 'exemplar' for the semiotic resource that shall be used for further analysis. This is carried in three stages:

⁴ Few examples included in the inventory are also from outside Bombay. These have been chosen specifically so that the features of Art Deco architecture during the period under study could also be observed in buildings in other cities in India (especially the office buildings and cinema houses). By adding these to the study, we assert that our study becomes both richer and validating.

1. Basic Object Identification

Using the Basic Objects identified, the building facades from the inventories are mapped to elicit a semiotic resource. The method of study is to mark the presence or absence of the Basic Objects, where 1 point is given for presence and 0 for absence.

2. Perceptual Survey

A Perceptual Survey is designed and carried out to find which of the Basic Objects are most easily perceived to be characteristic of Art Deco buildings by a group of respondents who are aware of Art Deco architecture and could identify its characteristics.

3. Weighted Basic Object Mapping

Using the findings of this survey, based on perceptibility, the different Basic Objects were given ‘weighted’ scores. These weights were incorporated back into the un-weighted identification of Basic Objects (stage 1) and both the findings were compared.

It is intended that the correlation between weighted and un-weighted scores give a clearer understanding of the building facades themselves in terms of gradation of proximity and distance to/from the exemplars in their respective categories. It is on the basis of this exercise that conclusions and inferences on the semiotics of Art Deco buildings in Bombay are derived.

6.1 Basic Order Mapping

In the period approximating the years after the end of the First World War until the end of the 1940’s, buildings in Bombay had started to display a certain consistency in their form, structure and detailing that was seen across typologies and locations. These elements so visibly present on the facades of the buildings allowed for identification, reading and deriving denotata and connotata. In Chapter 5, these Objects were ordered as follows:

FORMANT		DISCONTINUITY		SUPERIMPOSITION	
FUNCTIONAL	NARRATIVE	VERTICAL/ HORIZONTAL	BASE PLANE/ LAMINAR	ENHANCERS	NUANCERS
FORM	PRESENCE/ LOCATION	NUCLEUS	SUB-FORMANT	ABSTRACT	FIGURATIVE
<i>ALLOWS FOR IDENTIFICATION</i>		<i>ALLOWS FOR READING</i>		<i>CONNOTATION REFERENT</i>	

Table 6.1 Basic Order Mapping Template

We now examine each of the Basic Objects as architectural elements under the categories of formants, discontinuities and superimpositions, seen on the facades of various buildings in Bombay. A brief note next to the elements explains its location and context on the facade. These are the images used in the Perceptual Survey, where respondents were asked to list those Objects they perceived to be most associated with Art Deco facades.

6.1.1 Formants

For this identification, the formants (Also Ref. 5.6.1) are entities derived from the plastic configuration of an object that outlines it as a singularity and, consequently, as an actant. A formant (or a sub-formant) highlights the internal relations, among parts, that constitute the object (Mattozzi, 2009). In the buildings under study, formants usually refer to the central form around which the buildings are usually organised.

6.1.1.1 Functional:

The visual manifestation of functional aspects of the formants can be seen as the physical features related to the method and material of construction, in this case almost completely that of Reinforced Cement Concrete (RCC) frame construction.

1. Flat Roof



The top deck or terrace of the building, made with an RCC slab, gives the building its distinctive rectilinear appearance.

2. Cantilever



A rigid structure emerging free of a vertical support, normally seen in a building as a projecting balcony or porch, normally built in RCC.

3. Eyebrow



A protective projection over a window or a door to prevent rainwater or cast shadows, shaped using rectilinear, rounded or streamlined forms.

6.1.1.2 Narrative:

The narrative features of the formant are those of its aesthetic and creative expression, such as stepped forms, balconies and the use of symmetry. Most narrative features also have a connotative aspect such as monumentality and streamlining.

4. Stepped Form



The formal aspect of the building which is a series of ascending levels, normally the central element at the highest along a symmetrical axis that rises beyond the body of the building forming a striking element in the skyline.

5. Bright Colours



In Art Deco the use of bright colours attest to luxury, indexing the colours of precious stones such as jade and amber. In Bombay, the use of Colorcrete was a new material for exterior finishes that had a bright palette and gained popularity.

6. Balconies



A platform projecting from a building forming an intermediate space between the interior and the exterior; may be cantilevered or supported by RCC brackets or slender round columns.

7. Streamlining



Originally a shape offering least resistance to air or water; in the case of a buildings, having a curved edge contour in plan

8. Monumental



The massing of the building as massive, imposing, of a heroic scale

9. Tower



In the case of buildings under study, a tall, narrow finial-like element marking the highest point of the building along which the building is normally (though not always) symmetrically flanked

10. Symmetry



Buildings formally organised along rotational or translational identity on either side of a point, line or plane

11. Diagonal Symmetry



In the case of a building, being identical along the edge, on two perpendicular side roads

6.1.2 Discontinuities

Discontinuities on the buildings allow for semiotic readings through difference. In the case of the buildings under study, the massing of these edifices is built up with a sequence or layering of parts, each of which can be seen by itself or as a conglomeration of elements. In the case of the central ensemble, we refer to this as a nucleus that foregrounds the core around which the internal relations, among parts, that constitute the object are articulated. In our context, the nucleus creates a configuration that assumes as centre the vertical axis that is also the pivot for the general symmetry of the object. The nucleus includes the entrance, the porch, the vertical features indicating the shaft/stairwell inside and the tower or finial that rises beyond the building

line and creates its own identity on the skyline. We have earlier referred to this property of the formant as 'Heroic' - that valorises itself and its core.

6.1.2.1 Vertical/ Horizontal Discontinuities

In the buildings under study, vertical and horizontal elements form the objects of discontinuity. The nucleus, for example is the verticality that acts as a break as well as a focal point in the surface articulation causing the formation of sub-formants on either side. Horizontally too discontinuities are expressed in the manner the base plane (the floor that connects to the ground) is usually differently detailed than the upper floors of a building. Each floor is also articulated discontinuallly from each other, seen best in apartment buildings.

12. Shaft



The body of a central, vertical element in a building, in the case of the buildings under study the vertical accent related to the stairwell, visually emphasised, normally seen at the axis of symmetry

13. Vertical Accents



Building elements having a special emphasis in the vertical direction

14. Vertical Fenestration



Window elements, especially as seen in a nucleus, substantially taller than wider

**15. Vertical
Mullions**



In a building, not the same as 13, as here the mullions are the elements that divide a window vertically, normally built in stone or stucco for vertical effect

**16. Horizontal
Accents**



Building elements having a special emphasis in the horizontal direction, or, along the building floor lines. In this context speed lines (see 'speed/travel motifs' below)

**17. Horizontal
Projections**



Building elements emphasising horizontality- may be verandas, railings, eyebrows and suchlike. Not the same as 16, as these refer to the functions of balconies and eyebrows

6.1.2.2 Base Plane/ Laminar

These discontinuities can also be seen as inter-objectual relations established with other 'like' buildings (Mattozzi, 2009). An example of this is the following of the footprint of the building that is aligned with all other buildings on the street, or the alignment of floor planes with neighbouring buildings that leads to built or urban harmonies along the street.

18. Floor Bands



A flat, running band as a building element, in this case the manner in which each floor on the building is delineated or articulated. Indicators of individual floors.

**19. Prominent
Entrance**



The main entrance to a building opening directly on the street or building compound, normally emphasised by a porch or signage, a site of ornamentation

20. Street Opening



The main entrance to a building opening directly on the street; where the building has no compound.

21. Mixed Use



Where the building may be used for a variety of purposes at the same time, for example a cinema house with shops or restaurants in the same building, a functional trait seen visually in its difference.

**22. Discontinuous
Base**



In the case of the buildings under study, where the ground floor is clearly identified differently from the upper floors; either through visual accents or through alternate usage such as shopping.

23. Marquee



A sign or poster over the entrance of a cinema theatre indicating the current feature on show. The poster may change according to the feature, but the location and frame remain constant.

24. Signage (Building Name)



In the case of the buildings under study, the name of the building, inscribed or set into the building, normally displayed boldly in contemporary (Art Deco) fonts.

6.1.3 Superimpositions

Superimpositions are the various forms of architectural ornament and building-art (murals, reliefs, etc.), especially found on the buildings of this period. These are seen in the form of abstract devices (zig-zags, speed lines, chevrons) or iconic representation (humans at work, flora, fauna). Both are, by their very nature connotative, and narrative in nature.

They are studied here in the form of ‘Isotopy’, a semiotic model developed by Greimas (Hebert, 2009) discussed earlier in Chapter 3. In a text or a narrative, an isotopy is a repetition of a basic meaning trait, or seme that establishes some level of familiarity within the story and allows for a uniform reading/interpretation of it. Building facades are best read for denotation and connotation through these isotopic tropes. They also form a series of referents that together locate the buildings as objects of their time.

Most of the basic objects identified can be associated to one or more of the above. While most of the features enumerated above can be generally seen in all types of buildings built during the period under study, certain features are more likely to be seen on specific building types. We have now used the observable (not the abstract) to generate ‘exemplars’ for correlating for apartments/hotels, offices/commercial buildings and cinema houses in Bombay (1930-1949).

6.1.3.1 Enhancers

Enhancers are semes that synchronically work with the architectural elements themselves.

They enhance the architectural articulation by foregrounding, or underlining its importance on the layered facades. Enhancers bring visual richness to architectural elements, through various patterns, bands and colour. Streamlining, using building up tiered frames or repetitive patterns like banding may also be considered as Enhancers. Hypothetically, if the Enhancers were to be removed, the layers of architectural articulation could still stand, albeit in a 'stripped-down' version. (Dalvi, 2015, pp. 66-68)

25. Ziggurat



Building profile or superimposed ornament in the form of stepped rising layers connoting South American and Mesoamerican pre-Hispanic or Mesopotamian ziggurats (Custard, 2013). Different form 4 (stepped form) as here it is seen as part of the isotopy not building massing.

26. Abstract Lines



Superimposed ornament consisting of linear articulations like— ascending lines, parallel, symmetrical, unadorned, zigzag lines, dynamic geometric juxtapositions. (Custard, 2013)

27. Stucco Geometries



Geometrical patterns created in stucco in relief or bas relief

28. Grilles



A metal frame in various ornamental patterns like sunbursts, waves and surf, frozen fountains, that covers a window or opening in a building as protection against theft or forced entry.

29. Compound Walls/ Gates



The wall defining the plot on which the building stands, normally a masonry wall capped with ornamental grilles, and a matching metal gate for entry.

6.1.3.2 Nuancers

Nuancers are the diachronous, often iconic ornament-semes on the building. They are chosen as part of a thematic brief, often in conjunction with the building's name or its location. These themes often reflect the various Style Moderne conventions of celebrating modernity in the form of the fast paced urban life, evoking the speed of modern transport like a train or steamship. Sometimes the themes may evoke water or marine concepts. Nuancers are ornament-semes that carry the theme on the building facade in several manifestations such as relief murals, entrance gates, window and staircase grilles, etc. These semes display a stylised geometry that can be seen in the form of chevrons, sunbursts, zigzags, waves, highly stylized icons, musical notes, symbolic meanings, stylized flowers, stylized birds, machine gears, flowing waterfalls, fountains, stylised foliage, signage, humans in relief, dynamic activity. All these are Art Deco conventions. (Dalvi, 2015, p. 68)

30. Relief/ Bas-Relief



Murals inset or protruding from the surface of the wall planes, designed in stucco or stone, which may indicate stylized figures, sunbursts, animals or birds, floral patterns, or exotic or local cultural referents

**31. Figurative
Ornament**



Stucco murals or relief ornament indicating human or animal figures as decorative objects represented as workers, labourers, performers, or representing the jet age lifestyles (Custard, 2013)

**32. Speed/ Travel
Motifs**



Ornament evoking the modern era and its appurtenances connoting speed, electrical power, and different modes of contemporary travel like the steamship, airplane, dirigible or the motor car

**33. Local
Referents**



Murals inset or protruding from the surface of the wall planes, designed in stucco or stone, Indian figures, often archetypes of workers, labourers, farmers or city inhabitants

**34. Hollywood
Referents**



Ornament on Cinema Halls referencing the glamour and showbiz of Hollywood, often taken from American cinema sources

**35. World
Referents**



Ornamental sculpture or reliefs referencing different and exotic world cultures such as Classical Greek, Egyptian, Meso-American or African, also extending to contemporary references like Russian Ballet or the Bauhaus

6.2 Basic Order Identification- Cinema Houses

By carrying the mapping exercise of identifying Basic Orders on each of the 20 cinema houses on the inventory; it was able to discern which of these buildings displayed the most characteristics out of the 35 attributes against which they were mapped. As such it is possible to compare them for their proximity to the ‘exemplar’ for Cinema Houses that was posited in Chapter 5.

In order of proximity from closest to furthest based on (un-weighted) Object identification, the Cinema houses are arrayed as follows:

1	Bombay	Eros
2	Bombay	Liberty
3	Patiala	Phul
4	Madurai	Anna Malai
5	Bombay	Regal
6	Bombay	New Empire
7	Bombay	Metro
8	Chennai	Casino
9	Bombay	Diana
10	Delhi	Delite
11	Delhi	West End
12	Bombay	Aroua
13	Jaipur	Raj Mandir
14	Bombay	Maratha Mandir
15	Delhi	Filmistan
16	Bombay	Minerva
17	Delhi	Regal
18	Delhi	Shiela
19	Calcutta	Elphinstone Picture Palace
20	Bombay	Edward

6.2.1 Top 10 Cinema Houses closest to the Exemplar



1 Eros Bombay



2 Liberty Bombay



3 Phul Patiala



4 Anna Malai Madurai



5 Regal Bombay



6 New Empire Bombay



7 Metro Bombay



8 Casino Chennai



9 Diana Bombay



10 Delite Delhi

Figure 6.1 Top 10 Cinema Houses closest to the Exemplar

6.2.2 Cinema Houses- Most Shared Objects (out of 20)

1	marquee	19
2	flat roof	18
3	prominent entrance	18
4	street opening	17
5	signage	17
6	abstract lines	17
7	stucco geometries	17
8	bright colours	16
9	vertical accents	16
10	horizontal accents	16
11	discontinuous base	16
12	shaft	14
13	tower	13
14	stepped form	12
15	diagonal symmetry	11
16	horizontal projections	11
17	ziggurat	11
18	symmetry	10
19	Hollywood referent	9
20	speed/travel motifs	8
21	cantilever	7
22	streamlining	7
23	relief/ bas relief	6
24	figurative ornaments	6
25	local referent	6
26	world referent	6
27	vertical fenestration	3
28	mixed use	3

6.2.3 Top 10 Cinema Houses- Top 10 Most Shared Objects

1	flat roof	10
2	stepped form	10
3	shaft	10
4	vertical accents	10
5	prominent entrance	10
6	discontinuous base	10
7	marquee	10
8	signage	10
9	ziggurat	10
10	abstract lines	10

6.3 Basic Order Identification- Office Buildings

By carrying the mapping exercise of identifying Basic Orders on each of the 25 Office buildings in the inventory; it was able to discern which of these buildings displayed the most characteristics out of the 35 attributes against which they were mapped. As such it is possible to compare them for their proximity to the ‘exemplar’ for Office buildings that was posited in Chapter 5. In order of proximity from closest to furthest based on (un-weighted) Object identification, the Office Buildings are arrayed as follows:

1	Bombay	Laxmi Building
2	Bombay	Hornby View
3	Bombay	Citibank
4	Bombay	Indian Merchants Chamber
5	Bombay	Industrial Assurance Building
6	Bombay	Ismailia Bank Building
7	Bombay	New India Assurance
8	Bombay	Oriental Bank
9	Chennai	Oriental Building
10	Bombay	Currimji House
11	Chennai	Mysore bank Building

12	Bombay	Sreepant Bhavan
13	Bombay	HSBC
14	Chennai	12 Thambu Chetty Street
15	Chennai	Parry's
16	Chennai	Bombay Mutual Life Assurance
17	Bombay	Dhanraj Mahal
18	Panjim	The Mandovi
19	Chennai	United India Building
20	Bombay	Express Building
21	Bombay	Jeevan Prakash
22	Bombay	Maneckji Wadia Building
23	Bombay	The Ritz
24	Bombay	Kent House
25	Bombay	Bank of India

6.3.1 Top 10 Office Buildings closest to the Exemplar



1 Laxmi Building Bombay



2 Hornby View Bombay



3 Citibank Bombay



4 Indian Merchants Chamber Bombay



5 Industrial Assurance Building Bombay



6 Ismailia Bank Building Bombay



7 New India Assurance Bombay



8 Oriental Bank Bombay



9 Oriental Building Chennai



10 Currimji Building Bombay

Figure 6.2 Top 10 Office Buildings closest to the Exemplar

6.3.2 Office Buildings- Most Shared Objects (out of 25)

1	flat roof	25
2	prominent entrance	25
3	street opening	25
4	discontinuous base	23
5	symmetry	21
6	vertical accents	21
7	abstract lines	21
8	vertical fenestration	20
9	vertical mullions	20
10	horizontal projections	20
11	shaft	19
12	mixed use	19
13	stepped form	18
14	monumental	18
15	cantilever	17
16	tower	17
17	diagonal symmetry	17
18	ziggurat	17
19	streamlining	16
20	speed/travel motifs	16
21	signage	15
22	stucco geometries	12
23	relief/ bas relief	7
24	world referent	6
25	local referent	5
26	figurative ornaments	4

6.3.3 Top 10 Office Buildings- Top 12 Most Shared Objects

1	flat roof	10
2	stepped form	10
3	monumental	10
4	symmetry	10
5	shaft	10
6	vertical accents	10
7	vertical mullions	10
8	prominent entrance	10
9	street opening	10
10	ziggurat	10
11	abstract lines	10
12	stucco geometries	10

6.4 Basic Order Identification- Apartment Buildings

By carrying the mapping exercise of identifying Basic Orders on each of the 61 Apartment buildings in the inventory, it was able to discern which of these buildings displayed the most characteristics out of the 35 attributes against which they were mapped. As such it is possible to compare them for their proximity to the ‘exemplar’ for Apartment buildings that was posited in Chapter 5.

In order of proximity from closest to furthest based on (un-weighted) Object identification, the Apartment buildings are arrayed as follows:

1	Bombay	OVAL	Rusi Court/Court View
2	Bombay	DADAR MATUNGA	Giani Manzil
3	Bombay	OTHER	Shinghi Bhavan
4	Bombay	OVAL	Fair Lawn
5	Bombay	OVAL	Shiv Shanti Bhuvan
6	Bombay	OVAL	Palm Court
7	Bombay	OTHER	83 Mohamed Ali Road
8	Bombay	OVAL	Swastik Court
9	Bombay	OVAL	Rajjab Mahal

10	Bombay	MARINE DRIVE	Sunder Mahal
11	Bombay	DADAR MATUNGA	Abhyankar/ Ganesh Niwas
12	Bombay	OTHER	Lentinage
13	Bombay	OVAL	Empress Court
14	Bombay	OVAL	Belvedere Court
15	Bombay	OVAL	Ivorine
16	Bombay	OVAL	Sunshine
17	Bombay	MARINE DRIVE	Chateau Marine
18	Bombay	MARINE DRIVE	Framroze Court
19	Bombay	MARINE DRIVE	Riviera
20	Bombay	MARINE DRIVE	Soona Mahal
21	Bombay	DADAR MATUNGA	Mahadev Bhuvan
22	Bombay	DADAR MATUNGA	Mohan Manohar
23	Bombay	DADAR MATUNGA	Rao House
24	Bombay	OTHER	Residence Altamont Road
25	Bombay	OTHER	Ram Mahal
26	Bombay	OVAL	Green Fields
27	Bombay	OVAL	Windsor House
28	Bombay	MARINE DRIVE	Krishna Mahal
29	Bombay	DADAR MATUNGA	Bhoj Mahal
30	Bombay	DADAR MATUNGA	Ganesh Baug
31	Bombay	OTHER	Norman Haven
32	Bombay	OVAL	Queens Court
33	Bombay	OVAL	Oval View
34	Bombay	MARINE DRIVE	Oceania
35	Bombay	MARINE DRIVE	Sea Green
36	Bombay	OTHER	Cambridge Court
37	Bombay	OVAL	Moonlight
38	Bombay	OTHER	Moolji Manzil
39	Bombay	OTHER	Ahmed Mansion
40	Bombay	OTHER	Dreamland

41	Bombay	OVAL	Sorab Mansion/Rajesh Mansion
42	Bombay	DADAR MATUNGA	Hill View
43	Bombay	DADAR MATUNGA	Plot 579 Dadar Matunga Estate
44	Bombay	OTHER	Malabar Court
45	Bombay	OTHER	Sanghi House
46	Bombay	OVAL	Motabhoy Mansion
47	Bombay	MARINE DRIVE	Shanti Kuteer
48	Bombay	DADAR MATUNGA	Rigvedi Bramhan Niwas
49	Bombay	OTHER	Marble Arch
50	Bombay	OTHER	Krishnabad
51	Bombay	MARINE DRIVE	Keval Mahal
52	Bombay	DADAR MATUNGA	Khorshed House
53	Bombay	OTHER	Breach Candy House
54	Bombay	OTHER	Habib Court
55	Bombay	OTHER	Habib Flats
56	Bombay	MARINE DRIVE	Ganga Vihar
57	Bombay	DADAR MATUNGA	Raoji Sojpal Building
58	Bombay	MARINE DRIVE	Shreyas
59	Bombay	OTHER	Dil Pazir
60	Bombay	OTHER	Normandie
61	Bombay	DADAR MATUNGA	Baroda House

6.4.1 Top 10 Apartment Buildings closest to the Exemplar



1 Rusi Court OVAL



2 Giani Manzil DADAR MATUNGA



3 Shinghi Bhavan OTHER BOMBAY



4 Fair Lawn OVAL



5 Shiv Shanti Bhuvan OVAL



6 Palm Court OVAL



7 Mohamed Ali Road 83 OTHER BOMBAY



8 Swastik Court OVAL



9 Rajjab Mahal OVAL



10 Sunder Mahal MARINE DRIVE

Figure 6.3 Top 10 Apartment Buildings closest to the Exemplar

6.4.2 Apartment buildings- Most Shared Objects (out of 61)

1	bright colours	61
2	flat roof	60
3	balconies	60
4	cantilever	59
5	horizontal accents	59
6	horizontal projections	59
7	eyebrow	58
8	floor band	57
9	symmetry	56
10	prominent entrance	54
11	abstract lines	52
12	signage	50
13	discontinuous base	47
14	streamlining	42
15	grilles	42
16	compound walls/gates	42
17	shaft	38
18	tower	36
19	speed/travel motifs	36
20	stepped form	35
21	stucco geometries	30
22	ziggurat	28
23	diagonal symmetry	22
24	vertical mullions	20
25	world referent	15
26	figurative ornaments	5
27	relief/ bas relief	4
28	local referent	2

6.4.3 Top 10 Apartment Buildings- Top 15 Most Shared Objects

1	flat roof	10
2	cantilever	10
3	eyebrow	10
4	bright colours	10
5	balconies	10
6	symmetry	10
7	shaft	10
8	horizontal accents	10
9	horizontal projections	10
10	floor band	10
11	prominent entrance	10
12	discontinuous base	10
13	abstract lines	10
14	stucco geometries	10
15	speed/travel motifs	10

Preliminary observations of most shared objects on all apartment buildings, office buildings and cinema houses bring out certain commonalities even when looked at together. On the building facades what is consistently observed are basic objects that are formants and discontinuities. These give the facades their identities and set them apart from the rest. This is especially clear when the buildings are mapped most distant from the exemplar, as it is here that the discontinuities, consistent earlier start to break down. Isotopies, on the other hand are not central to the identification of these facades, but do act in their role as emphasizeers. In all three types, enhancers and nuancers are seen most prominently in the buildings that are closest to the exemplar.

We make two inferences at this stage- the first that Art Deco buildings share enough common features even across building types to have family resemblances that aid perceptual identification. The second that the surface ornamentation that indeed gives Art Deco its name is not a central identifying characteristic, at least in the buildings surveyed in our inventory. We will discuss both these inferences in greater detail in the chapter on findings and in the conclusions.

6.5 Perceptual Survey

While Basic Objects on the Cinema Houses, Office Buildings and Apartment buildings have been identified for presence or absence, our study and indeed our analysis will become the richer if a perceptual analysis is embedded in the observations. In the generation of exemplars we have used the resources of experts in the field. It would be significant to see how an aware layperson responds to the Basic Objects.

We accomplish this by conducting a survey based on Eleanor Rosch's premise that "Basic-level objects are easily rendered as simple gestalts, making them easy to identify and use as perceptual templates." (Shore, 1996) Shore further elaborates Rosch's conception of Basic Objects by asserting that "Children generally learn basic-level terms before they master more general or specific levels of categorization." This is because basic-level categorization employs part-to-whole associations (synecdoche) and can serve as exemplar models for the identification of related objects, both more general and more specific. (p. 64) As mentioned earlier we have identified the Basic Objects as elements on the facades of buildings in our inventory, one level lower than the super-ordinate of the buildings themselves.

It is intended that using the results of the survey, we can assign 'weights' to the Basic Objects identified and compare the two readings for achieving a better understanding of the facades under study. The observers of these facades, if familiar with them would be able to choose the Basic Object they most associated with Art Deco. The weighted scores will give a clearer understanding of the perception of the building facade themselves in terms of gradation of proximity and distance to/from the exemplars in their respective categories.

The Survey was designed to see which of the Basic Objects are most easily perceived to be characteristic of Art Deco buildings by a group of respondents who are aware of Art Deco architecture and could; through the Perceptual processes of their own senses, experiences and acquired knowledge identify its characteristics.

The survey was carried out in two parts (See Appendix 2 for the Survey Form used) –

In the first part of the survey, respondents were presented images and titles of 35 Basic Objects associated with Art Deco facades (the same used in our earlier Basic Object identification) and asked to list those elements they perceived to be most associated with Art Deco facades in the order of 1 to 5 (where 1 was the element most associated with Art Deco).

In the second part of the survey, the respondents were shown images (without identifying titles) of the top ten Cinema Houses, Office Buildings and Apartment Buildings that emerged out of the Basic Object identification (described earlier) and asked to choose which three buildings they thought best represented that category in the order of 1 to 3 out of 10 buildings (where 1 was the most representative). In addition the respondents were asked basic information about their age, sex, nationality, place of residence, level of education, experience and specialization.

6.5.1 The Perceptual Survey- Data

The survey commenced on the 18th of May 2016 and completed on the 10th of June 2016. There were 80 respondents. 1 response was unusable and discarded. All respondents answered **YES**, to the initial query - ‘I can recognize Art Deco buildings and their visual characteristics’.

Out of the remaining 79, 36 were female and 43 were male. 21 respondents were from the age group 51 and above, 31 from 36-50, 13 from 26-35, while 14 respondents were aged below 25 (but were all 18 and above- they were undergraduate students of architecture).

76 respondents were Indian citizens while 3 were citizens of the United States. 56 respondents gave their place of residence as Mumbai, 8 as Navi Mumbai, 6 as New Delhi, 2 as Bangalore and one each as Dehradun, Kolkota, Sharjah (UAE), Urbana (Illinois, US), Austin (Texas, US), Rochester Hills (Michigan, US) and Princeton (Massachusetts, US).

57 respondents were graduates (or undergraduates) in architecture, 10 had BA degrees, 3 were graduates in the Fine Arts, 2 in Engineering, one in B Sc. There were also 3 with PhD. 3 responded with ‘none of the above’. In terms of current specialization, 51 were architects (or students of architecture), 5 were journalists, 3 each were Urban Designers, Visual Artists or

Historians, 2 each were Conservationists or Advertisers, while one each was an art curator, behavioural scientist, cartoonist, media professional, writer, engineer, environmentalist, film maker, photographer and urban regional scientist.

In terms of experience in the design or related fields, 21 respondents had more than 25 years of experience while 17 had more than 10 years, 2 between 5-9 years, 8 between 2-4 years. There was one fresh graduate, 8 postgraduate students and 10 undergraduate students. 12 respondents answered NO to experience in design fields. As can be observed from the profiles of respondents to the survey, they shared awareness about Art Deco architecture and its visual characteristics and were urban residents with academic experience and professional expertise that would allow them to be discerning about the questions posed in the survey.

6.5.2 Association of Basic Objects with Art Deco architecture

The first question asked of the respondents was related to the understanding and identification of Art Deco architecture. Here, images of 35 architectural elements were displayed as well as their titles. Respondents were asked to select the top 5 elements they associated best with Art Deco architecture. They were expected to give their order of preference from **1 to 5**, with 1 being the best. These responses were collated and arrayed based on the mode (the value most often sampled in the responses) and count (frequency of the choice of the Basic Object, the number preceding the Basic Object) as seen below:

MODE = 1	MODE = 2	MODE = 3	MODE = 4	MODE = 5
30 balconies	19 vertical accents	20 stucco geometries	25 grilles	22 signage
24 streamlining	17 shaft	13 relief/ bas relief	19 floor band	11 monumental
20 ziggurat	12 abstract lines	8 vertical mullions	13 prominent entrance	5 cantilever
16 tower	10 bright colours	9 vertical	11 flat roof	3 speed/travel motifs
15 symmetry	11 diagonal		7 compound	3 discontinuous

15 stepped Form 7 horizontal accents	symmetry 7 horizontal projections	fenestration 5 street opening 4 eyebrow	walls/gates 5 world referent 4 figurative ornaments	base MODE NOT DEFINED 2 local referents 1 mixed use 1 marquee 1 Hollywood referent
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Table 6.2 Respondents identification of Basic Objects, based on Mode (79 respondents)

In the table above Mode=1 refers to the Basic Objects chosen by most respondents to be the first choice in five. These include ‘balconies’, ‘streamlining’, ‘ziggurat’, ‘tower’, amongst others as the Objects most respondents associated best with Art Deco architecture. Mode=2 Objects were the most chosen for the second choice, and so on. In the cases of ‘local referents’, ‘mixed use’, ‘marquee’ and ‘Hollywood Referents’, it was not possible to determine the mode based on the respondents choices.

6.5.3 Buildings as best examples of Art Deco architecture

In the second part of the survey, the respondents were shown images (without identifying titles) of the top ten Cinema Houses, Office Buildings and Apartment Buildings that emerged out of the Basic Object identification (described earlier) and were asked to indicate, in their opinion, which of the buildings displayed were the best examples of Art Deco Cinema Houses, Office Buildings and Apartment Buildings (each asked separately). Respondents were asked to give their order of preference from **1 to 3** (with 1 being the best). After collating the data, the following results were obtained:

6.5.3.1 Cinema Houses perceived to be best examples (by 79 respondents)

mode	Cinema House	count
1	Eros	68
1	Anna Malai, Madurai	21
2	Delite, Delhi	13
2	Diana	3
3	Casino, Chennai	32
3	Phul, Patiala	27
3	Regal	20

3	Metro	19
3	Liberty	16
3	New Empire	9

6.5.3.2 Office buildings perceived to be best examples (by 79 respondents)

mode	Office building	count
1	Industrial Assurance	58
1	Currimji Building	7
2	Oriental Building, Chennai	42
2	Citibank	35
2	Laxmi Building	6
3	New India Assurance	22
3	Indian Merchants Chamber	19
3	Hornby View	15
3	Ismailia Bank	12
3	Oriental Bank	9

6.5.3.3 Apartment buildings perceived to be best examples (by 79 respondents)

mode	Apartment building	count
1	Giani Manzil	47
2	Shivshanti Bhavan	34
2	Palm Court	28
2	Rajjab Mahal	15
2	Swastik Court	13
3	Rusi Court	35
3	Fairlawn	20
3	Shinghi Bhavan	14
3	Sunder Mahal	13
3	83, Mohamed Ali Road	4

6.6 Weighted Basic Object Mapping

The first part of the findings of the Perceptual survey served to tell us which of the Basic Objects were best perceived by our respondents to associate with Art Deco architecture. Based on their perceptions and preferences, we now create weighted scores for each of the Basic Objects that we used for the exercise of mapping in our first identification. The intention is get a better

appreciation of the buildings themselves from both, the buildings as text (un-weighted) as well as the buildings as ‘read’ text (weighted). By incorporating these weighted scores back into the un-weighted identification of Basic Objects, we can then compare the findings for correlation and deviation.

The formula used for creating the weighted score for each Basic Object was as follows:

$$(\text{count} \times \text{weight}) / \text{total number of Basic Objects (ie. 35)}$$

So, for example, based on the survey, the mode for ‘vertical accents’ is 2 (so the weight used is 4, second from top) while the count is 19, which when multiplied and then divided by 35 yields the weighted score of 2.17. This score replaces the identified score of 1 in the first exercise of Basic Object identification. The weighted score thus incorporates both the preference of the element in the scale of 1 to 5 as well as the frequency of the object being chosen out of a list of 35.

Given below are the weighted scores for all 35 Basic Objects, arranged in order of the final weighted scores:

		count	mode	weight	c*w	c*w/35 weighted score
1	balconies	30	1	5	150	4.23
2	streamlining	24	1	5	120	3.43
3	ziggurat	20	1	5	100	2.86
4	tower	16	1	5	80	2.29
5	vertical accents	19	2	4	76	2.17
6	symmetry	15	1	5	75	2.14
7	stepped form	15	1	5	75	2.14
8	shaft	17	2	4	68	1.94
9	stucco geometries	20	3	3	60	1.71
10	grilles	25	4	2	50	1.43
11	abstract lines	12	2	4	48	1.37
12	diagonal symmetry	11	2	4	44	1.26
13	bright colours	10	2	4	40	1.14
14	relief/ bas relief	13	3	3	39	1.11
15	floor band	19	4	2	38	1.09
16	horizontal accents	7	5	1	35	1
17	horizontal projections	7	2	4	28	0.8
18	vertical fenestration	9	3	3	27	0.77
19	prominent entrance	13	4	2	26	0.74
20	vertical mullions	8	3	3	24	0.69

21	signage	22	5	1	22	0.63
22	flat roof	11	4	2	22	0.69
23	street opening	5	3	3	15	0.43
24	compound walls/gates	7	4	2	14	0.4
25	eyebrow	4	3	3	12	0.34
26	monumental	11	5	1	11	0.31
27	world referent	5	4	2	10	0.29
28	figurative ornaments	4	4	2	8	0.23
29	cantilever	5	5	1	5	0.14
30	speed/travel motifs	3	5	1	3	0.09
31	discontinuous base	3	5	1	3	0.09
32	local referents	2	x	1	2	0.06
33	mixed use	1	x	1	1	0.03
34	marquee	1	x	1	1	0.0
35	Hollywood referent	1	x	1	1	0.03

With the scores above replacing the unit of ‘presence’ in the first identification, the Weighted Basic Object Mapping yielded the following results for Cinema Houses, Office buildings and apartment buildings in relation to the exemplar:

6.6.1 Cinema Houses

In order of proximity from closest to furthest from the Cinema House exemplar, a comparison of buildings arrayed according to Basic Object Identification (un-weighted) and Weighted Mapping can be made:

	Cinema Houses	Cinema Houses	
	Basic Object Identification	Weighted Mapping	
1	Eros	Eros	1
2	Liberty	Phul, Patiala	2
3	Phul, Patiala	Liberty	3
4	Anna Malai, Madurai	Anna Malai, Madurai	4
5	Regal	New Empire	5
6	New Empire	Casino, Chennai	6
7	Metro	Delite, Delhi	7
8	Casino, Chennai	Regal	8
9	Diana	Diana	9
10	Delite	Metro	10
11	West End, Delhi	West End, Delhi	11
12	Aroua	Aroua	12
13	Raj Mandir, Jaipur	Filmistan, Delhi	13

14	Maratha Mandir	Minerva	14
15	Filmistan, Delhi	Maratha Mandir	15
16	Minerva	Raj Mandir, Jaipur	16
17	Regal, Delhi	Elphinstone, Calcutta	17
18	Sheila, Delhi	Regal , Delhi	18
19	Elphinstone, Calcutta	Shiela, Delhi	19
20	Edward	Edward	20

6.6.2 Office buildings

In order of proximity from closest to furthest from the Office building exemplar, a comparison of buildings arrayed according to Basic Object Identification (un-weighted) and Weighted Mapping can be made:

	Office Buildings Basic Object Identification	Office Buildings Weighted Mapping	
1	Laxmi Building	Laxmi Building	1
2	Hornby View	Indian Merchants Chamber	2
3	Citibank	Ismailia Bank Building	3
4	Indian Merchants Chamber	Industrial Assurance Building	4
5	Industrial Assurance Building	Citibank	5
6	Ismailia Bank Building	Oriental Bank, Chennai	6
7	New India Assurance	Currinji House	7
8	Oriental Bank, Chennai	Hornby View	8
9	Oriental Building	Oriental Building	9
10	Currinji House	12 Thambu Chetty, Chennai	10
11	Mysore Bank, Chennai	New India Assurance	11
12	Sreepant Bhavan	Sreepant Bhavan	12
13	HSBC	HSBC	13
14	12 Thambu Chetty, Chennai	Mysore Bank, Chennai	14
15	Parry's, Chennai	Parry's, Chennai	15
16	Bombay Mutual, Chennai	Bombay Mutual, Chennai	16
17	Dhanraj Mahal	United India, Chennai	17
18	The Mandovi, Panjim	The Mandovi, Panjim	18
19	United India, Chennai	Jeevan Prakash	19
20	Express Building	Dhanraj Mahal	20
21	Jeevan Prakash	Express Building	21

22	Maneckji Wadia Building	The Ritz	22
23	The Ritz	Maneckji Wadia Building	23
24	Kent House	Kent House	24
25	Bank of India	Bank of India	25

6.6.3 Apartment buildings

In order of proximity from closest to furthest from the Apartment building exemplar, a comparison of buildings arrayed according to Basic Object Identification (un-weighted) and Weighted Mapping can be made:

	Apartment Buildings Basic Object Identification	Apartment Buildings Weighted Mapping	
1	Rusi Court/Court View	Giani Manzil	1
2	Giani Manzil	Rusi Court/Court View	2
3	Shinghi Bhavan	Shiv Shanti Bhuvan	3
4	Fair Lawn	Palm Court	4
5	Shiv Shanti Bhuvan	83 Mohamed Ali Road	5
6	Palm Court	Shinghi Bhavan	6
7	83 Mohamed Ali Road	Fair Lawn	7
8	Swastik Court	Mahadev Bhuvan	8
9	Rajjab Mahal	Rao House	9
10	Sunder Mahal	Sunder Mahal	10
11	Abhyankar/ Ganesh Niwas	Riviera	11
12	Lentinage	Soona Mahal	12
13	Empress Court	Lentinage	13
14	Belvedere Court	Chateau Marine	14
15	Ivorine	Bhoj Mahal	15
16	Sunshine	Belvedere Court	16
17	Chateau Marine	Ram Mahal	17
18	Framroze Court	Sunshine	18
19	Riviera	Rajjab Mahal	19
20	Soona Mahal	Abhyankar/ Ganesh Niwas	20
21	Mahadev Bhuvan	Krishna Mahal	21
22	Mohan Manohar	Framroze Court	22
23	Rao House	Cambridge Court	23
24	Residence Altamont Road	Residence Altamont Road	24
25	Ram Mahal	Ivorine	25
26	Green Fields	Windsor House	26

27	Windsor House	Ganesh Baug	27
28	Krishna Mahal	Mohan Manohar	28
29	Bhoj Mahal	Norman Haven	29
30	Ganesh Baug	Sea Green	30
31	Norman Haven	Empress Court	31
32	Queens Court	Swastik Court	32
33	Oval View	Plot 579 Dadar Matunga Estate	33
34	Oceania	Oval View	34
35	Sea Green	Malabar Court	35
36	Cambridge Court	Oceania	36
37	Moonlight	Green Fields	37
38	Moolji Manzil	Queens Court	38
39	Ahmed Mansion	Moonlight	39
40	Dreamland	Hill View	40
41	Sorab Mansion/Rajesh Mansion	Marble Arch	41
42	Hill View	Shanti Kuteer	42
43	Plot 579 Dadar Matunga Estate	Krishnabad	43
44	Malabar Court	Sanghi House	44
45	Sanghi House	Breach Candy House	45
46	Motabhoy Mansion	Rigvedi Bramhan Niwas	46
47	Shanti Kuteer	Ahmed Mansion	47
48	Rigvedi Bramhan Niwas	Dreamland	48
49	Marble Arch	Moolji Manzil	49
50	Krishnabad	Keval Mahal	50
51	Keval Mahal	Motabhoy Mansion	51
52	Khorshed House	Sorab Mansion/Rajesh Mansion	52
53	Breach Candy House	Raoji Sojpal Building	53
54	Habib Court	Dil Pazir	54
55	Habib Flats	Habib Flats	55
56	Ganga Vihar	Khorshed House	56
57	Raoji Sojpal Building	Baroda House	57
58	Shreyas	Ganga Vihar	58
59	Dil Pazir	Habib Court	59
60	Normandie	Shreyas	60
61	Baroda House	Normandie	61

6.7 Summary

In this chapter, we presented the outcome of the methodological practices of Basic Object Mapping that we had set out in the Research Design. The mapping was the extension of the identification of Basic Objects that were derived from the statements of exemplars in Chapter 5. 35 Basic Objects were derived, and stratified into 3 categories- formants, discontinuities and superimpositions that allowed for the identification reading and nuanced appreciation of the facades under study. Our methodological pursuit led us to mapping Basic Objects on all the Cinema Houses (20), Office Buildings (25) and Apartment Buildings (61) in our inventory. This was carried out, first, as a mapping of presence/absence of the elements on the facades (un-weighted).

The same exercise was carried out after giving weighted scores to the presence/absence of Basic Objects. The weights were the result of a Perceptual Survey carried out with 79 respondents who were aware of Art Deco architecture, and who were shown the 35 Basic Objects for their perception on which of them represented Art Deco architecture best. Based on their responses the weights were derived and assigned to each of the Basic Objects.

This has allowed for two readings of all the facades in the inventory (weighted and un-weighted) that can be compared for proximity and deviation. In both cases it was possible to chart which of the buildings under study came closest to the exemplar and which were furthest away from it. In the next Chapter (7), we discuss the findings for their correlations as well as their semantic functions.

Chapter 7 Findings and Analysis

7.1 Introduction

The results of the tools deployed are collated and presented here. The findings are discussed for their implications within the methodologies applied. Based on the determination of exemplars, ‘Basic Objects’ are observed and mapped, and then validated for proximity.

Using the Exemplar for the three building types, and the tools created for identifying, surveying and mapping Basic Objects in the buildings under study, the following process was used:

1. Basic Object Identification

Using the Basic Objects identified in the previous chapter, the building facades from the inventories are mapped to elicit a semiotic resource. The method of study is to mark the presence or absence of the Basic Objects, where 1 point is given for presence and 0 for absence.

2. Perceptual Survey

A Perceptual Survey is designed and carried out to find which of the Basic Objects are most easily perceived to be characteristic of Art Deco buildings by a group of respondents who are aware of Art Deco architecture and could identify its characteristics.

3. Weighted Basic Object Mapping

Using the findings of this survey, based on perceptibility, the different Basic Objects were given ‘weighted’ scores. These weights were incorporated back into the un-weighted identification of Basic Objects (stage 1) and both the findings were compared.

7.2 Cinema Houses- Findings

7.2.1 Cinema Houses- Most Shared Objects

When the top 10 cinema houses closest to the Exemplar are charted for Objects most shared, it is observed that the following Formants and Discontinuities (Figure 7.1) are seen in all 10 buildings. Cinema Houses display a stepped form with vertical accents and have a valorised nucleus. Of the top ten cinema houses that display the greatest proximity to the exemplar, the following 10 Basic Objects are present on all the buildings:

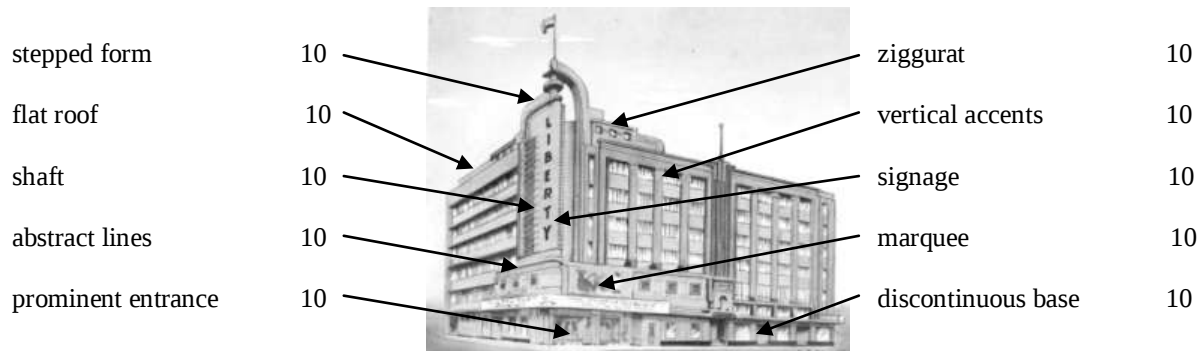


Figure 7.1 Basic Objects on Liberty Cinema shared in common with all the top 10 Cinema Houses closest to the exemplar

Taking one example, that of the Liberty Cinema, seen above, which is 2nd closest to the exemplar in Basic Object identification (85.19%) and 3rd closest with weighted mapping (87.14%), the Basic Objects are prominent on the facade of the building. These are Objects that Liberty shares the most with other cinema houses closest to the exemplar.

We find that, out of the 20 buildings in the inventory, 10 buildings display between 70.63/74.07 (%weighted/un-weighted) to 96.92/96/3% of the Basic Objects that make up the Exemplar. As

one charts the Cinema Houses receding from the exemplar, the Basic Objects fall off from 67% to 14%. As the cinema houses get graded furthest from the exemplar, the following Formants (Flat Roof) and Discontinuities (Stepped Form, Vertical Accents, Shaft, Discontinuous Base, Entrance Portal, Marquee/ Signage) either become vestigial or drop off completely from the facade. This is a significant finding, and its relevance is further discussed in the conclusions.



Eros Cinema Bombay

Closest to exemplar based on Basic Object Identification

Most representative of Art Deco Cinema House based on Perceptual Survey

Closest to exemplar based on Weighted Object Mapping

Figure 7.2 Cinema houses closest to exemplar based in Identification, weighted mapping and Perceptual survey

7.2.2 Cinema Houses- Most Proximal to the exemplar

Of all the Cinema Houses in the inventory mapped, the Eros Cinema in Bombay is closest in proximity to the Exemplar. We find that the Eros dominates the list in all 3 exercises carried out to semiotically chart the category of Cinema House in Basic Object Identification; it displays 26 out of 28 Objects that make up the Cinema House exemplar.

In the weighted Mapping of Basic Objects, it displays 96.92% affinity to the exemplar (100%). In the Perceptual Survey exercise 68 out of 79 (86.11%) respondents chose the Eros out of ten displayed Cinema Houses as the most representative of Art Deco Cinema Houses.

7.2.3 Cinema Houses in Bombay

The cinema houses of Bombay that are already well regarded as examples of Art Deco, like the Liberty, Regal, New Empire and Metro all display between 20 to 23 Objects. An inventory using only the Cinema Houses from Bombay shows consistency of identification and mapping.

Cinema Houses of Bombay Basic Object Identification		Weighted Mapping	Survey
Eros	1	Eros	1 Eros
Liberty	2	Liberty	2 Regal
Regal	3	New Empire	3 Metro
New Empire	4	Regal	4 Liberty
Metro	5	Diana	5 New Empire
Diana	6	Metro	6 Diana
Aroua	7	Aroua	7
Maratha Mandir	8	Minerva	8
Minerva	9	Maratha Mandir	9
Edward	10	Edward	10



Figure 7.3 The Aurora, Matunga built in 1940



Figure 7.4 Maratha Mandir built in 1958

Only the Aurora built during this period (1940) in the suburb of Matunga shows characteristics that allow for identification more with Modernist buildings rather than Art Deco, with its asymmetry and non linear discontinuities. It does however display some classic tropes like speed lines and portholes windows that can be readily associated with Art Deco architecture as Enhancers. In the case of cinema houses in Bombay furthest from the exemplar, it is observed that the stepped/ziggurat form is absent on the facades. In several cases the buildings are no longer symmetrical, with a consequent loss of the nucleus, and its discontinuities of entrance, shaft and tower. Edward shows neo-classical features.

7.2.4 Cinema Houses outside Bombay

In this particular inventory, both Cinema Houses from outside Bombay were included as well as Cinema Houses built both before as well as after 1930-1949, the period under review. This was done to add richness to the mix as well as allow for any validation of affinity and dissimilitude from the exemplar.

We find that several cinema houses outside Bombay also display great affinity to the Exemplar. The Phul in Patiala (93.87/81.48%) and the Anna Malai in Madurai (82.77/81.48%) are the best examples of this. Among the ten, closest to the exemplar are also Casino, Chennai and Delite, Delhi.



Figure 7.5 The Anna Malai, Madurai (undated)



Figure 7.6 The Phul, Patiala (undated)

In both Phul and Anna Malai, formants are clearly identifiable, like flat roofs and cantilevers. Intra-Objectual features are dominated by a stepped form. The buildings have bright colours, have discontinuities arrayed along the axis of symmetry and display streamlining. Vertical accents dominate with the nucleus clearly valorised, displaying discontinuities of the entrance portal, marquee, shaft and tower. The base displays the functions of the box office, etc. The Phul opens out onto the street, while the Anna Malai is located in a compound of its own.

7.2.5 Cinema Houses- Inferences

Taken as whole, Cinema Houses in Bombay (and outside) display greater affinity to the exemplar when they are built during the period 1930-1949.

Isotopy is clearly visible in the form of Enhancers in those cinema houses closest to the exemplar- the ziggurat stepped shape, abstract lines that highlight building edges, geometries created in stucco, and Hollywood-esque letter forms and marquee. All the top 10 buildings show Enhancers like ziggurat shaped accents and abstract lines that define various edges of the buildings.

However, superimpositions of architectural ornament in the form of Nuancers are scattered and not universal, Nuancers can be seen to best effect on the facade of the Liberty, Bombay, where the shaft is delineated like a piano keyboard, or in the Eros, with female forms in relief murals that are located on either side of the entrance, or indeed the Regal, Bombay with the theatre Masques dominating the facade. On the whole, Nuancers are relatively infrequent. Any useful readings of Art Deco facades of Cinema Houses must therefore be made through the appreciation and consistency of formants and discontinuities, rather than ornament and decoration (that one may superficially assume would be dominant in Art Deco architecture).

7.3 Office Buildings- Findings

7.3.1 Office Buildings in Bombay

The top ten Office buildings display an urban aspect opening directly on the streets where they are located. The dominant discontinuity/nucleus rises above the skyline making them stand out

from the rest of the city fabric. Of the top ten Office Buildings that display the greatest proximity to the exemplar, the following 12 Basic Objects are present on all the buildings:

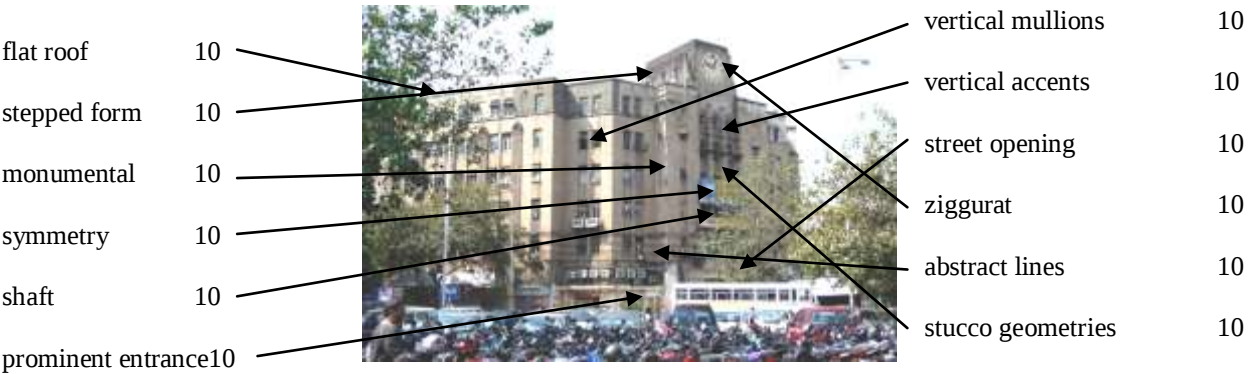


Figure 7.7 Basic Objects on Industrial Assurance Building shared in common with all the top 10 Office Buildings closest to the exemplar

As can be seen in the example of the facade of the Industrial Assurance Building in Bombay that dominates an important street crossing in South Bombay, a monumental stepped symmetry predominates, along with vertical accents in the form of mullions. The discontinuities are also valorised in the form of the prominent entrance, signage, shaft and tower culminating in a clock that is visible from a great distance. The ziggurat like structure is further enhanced by the masonry cladding and overlays of abstract lines and geometries.

It is observed that, out of the 25 buildings in the inventory, 10 buildings display between 98.01/92.31 (%weighted/un-weighted) to 81.49/69.23 % of the Basic Objects that make up the Exemplar. It is observed that 8 out of 10 buildings (like both of the above) are located at prominent street corners that they dominate with their monumental character, stepped forms, symmetry, vertical accents and valorised nucleus terminating in towers or beacons.



Laxmi Building Bombay

Closest to exemplar based on Basic Object Identification

Closest to exemplar based on Weighted Object Mapping



Industrial Assurance Building Bombay

Most representative of Art Deco Office Buildings based on
Perceptual Survey

Figure 7.8 Office Buildings closest to exemplar based in Identification, weighted mapping and Perceptual survey

All the top 10 buildings are highlighted with Enhancers like abstract lines and stucco geometry. Nuancers in the form of figurative ornament and relief work are only seen occasionally. Like cinema houses, Art Deco office buildings in Bombay closest to the exemplar are noticeable more for their symmetrical, stepped and monumental character than for their superimposed ornament.

Based on the Basic Object Identification, the Laxmi Building in Bombay is closest to the Exemplar displaying 24 out of 26 Objects (92.31%). In the Weighted Mapping too, the Laxmi Building comes closest to the exemplar displaying 98.01% of the characteristics of Art Deco Office buildings in Bombay.

Basic Object Identification		Weighted Mapping		Survey	
Laxmi Building	1	Laxmi Building	1	Industrial Assurance	
Citibank	2	Indian Merchants Chamber	2	Oriental Building, Chennai	
Hornby View	3	Ismailia Bank Building	3	Citibank	
Indian Merchants Chamber	4	Industrial Assurance Building	4	New India Assurance Building	
Ismailia Bank Building	5	Citibank	5	Indian Merchants Chamber	
Industrial Assurance Building	6	Oriental Building, Chennai	6	Hornby View	
Oriental Building, Chennai	7	Currimji House	7	Ismailia Bank	
Oriental Bank	8	Hornby View	8	Oriental Bank	
New India Assurance	9	Oriental Bank	9	Currimji Building	
Currimji House	10	172 Thambu Chetty, Chennai	10	Laxmi Building	



Figure 7.9 Laxmi Building, Bombay, built in 1938



Figure 7.10 Oriental Building, Chennai, built in 1935

7.3.2 Office Buildings outside Bombay

In the inventory are included buildings from Chennai and Panjim that reflect the period. The buildings chosen from Chennai are largely insurance and bank buildings, quite like the ones from Bombay. While 9 out of the top 10 buildings are from Bombay, the Oriental Building in Chennai makes this list displaying 21 out of 24 Objects (90.72% weighted mapping). Several examples from Chennai are contemporaneous to the Bombay buildings, and also show similar affinities to the Exemplar allowing them to be easily identifiable as Art Deco buildings.



Figure 7.11 United India Building, Chennai, built in 1940



Figure 7.12 Mysore Bank, Chennai, built in 1957



Figure 7.13 Parry's, Chennai, built in 1938

7.3.3 Office Buildings- Inferences

Two sets observations can be made based on the Mapping of Office buildings (1930-1949): The first- there exists a similarity between the office buildings in Bombay and Chennai, with respect to the formal arrangement of masses and the stress on monumentality and the vertical. This tends to reflect that in both cases several of the examples are buildings for banks or insurance companies, and in some cases the same companies. The findings indicate that over the period of three decades, the buildings do not follow a linear evolution and transformation, but show a great deal of eclectic choice-making even when built within a few years of reach other. This chronological re-contextualization is discussed in greater detail in the conclusions.

When we map these buildings for the presence of figurative isotopy, we find that Nuancers are more predominant in the Bombay buildings and fragmentary in the Chennai buildings. On the facades of buildings in Bombay like the New India Assurance or the Laxmi Building, figurative renderings are front and centre. In the case of the Laxmi Building, apart from the very focal statue of the Goddess Laxmi (Goddess of Wealth) that forms the pinnacle of the nucleus, the rest of the facade also shows local referents like elephants that are a recurring motif, both flanking the entrance portal as well as on a running frieze. On the facade of the New India Assurance Building, the central symmetry is created by flanking Amazon women as colossi, while a sequence of relief murals at the base of the building evoke the various forms and dignity of indigenous labour.



Figure 7.14 Indian Merchants Chambers, Church Gate, built in 1940



Figure 7.15 Kent House, Pheroze Shah Mehta Road, built in 1935

The second finding is that the formal aspects of the Office buildings show a variation where the buildings are not dominating their location, but are part of a larger precinct of self similar buildings. In the latter case, the office buildings display characteristic similar to Apartment buildings in a like situation- vertical lines give way to horizontals that form intra objectual relationships of floor bands, balconies and chajjas. Brooding masonry is replaced by (mostly) white plaster rendering, while the formal symmetries and discontinuities continue to be observable. This can be seen in buildings like the Indian Merchants Chamber, or the Ismailia Bank Building.

There are exceptions, such as the Kent Building on Pherozeshah Mehta Road Bombay, which shows almost no Basic Objects other than horizontal discontinuities and floor bands. This building displays a distinct Modernist aspect, in comparison to its proximal neighbours like the Laxmi Building or the Citibank Building that have a close affinity to the exemplar. Like the Cinema Houses too, we observe the dominance of the formants and discontinuities over the superimpositions and isotopies in Office buildings.

7.4 Apartment Buildings- Findings

7.4.1 Apartment buildings- inventory

In our inventory we have identified buildings from three precincts in Bombay- the Oval Maidan Precinct, the Marine Drive Precinct and the Dadar-Matunga neighbourhood. The first two were the results of two reclamation projects in the Back Bay that were completed in 1929 and 1940 respectively, the last being a planning project to the north of the erstwhile mill lands. During our period of study a large number of apartment houses were built in Bombay (and indeed in most other cities in India) and our inventory consists of 61 apartment buildings all from Bombay, and taken from the three precincts described above as well as from other parts of Bombay.

7.4.2 Apartment Buildings- Proximity of Basic Objects

Of the top ten Apartment Buildings that display the greatest proximity to the exemplar, the following 15 Basic Objects are present on all buildings:



Figure 7.16 Basic Objects on Fair Lawn shared in common with all the top 10 Apartment Buildings closest to the exemplar



**Figure 7.16 Basic Objects on Rusi Court shared in common with all the top 10 Apartment Buildings closest to the exemplar
Closest to exemplar based on Basic Object Identification**

Taking one example of an Apartment building facade from the Oval Maidan precinct, we see that 15 Basic Objects that can be identified on all the top ten buildings having greatest proximity towards the exemplar. These include most formants (flat roofs, cantilevers, eyebrows, etc.) and

discontinuities (shaft, balconies, floor bands, abstract lines, symmetry, etc.), and some isotopies (stucco geometries, speed/ travel motifs) as well. Fairlawn is the 4th closest in proximity to the exemplar in un-weighted identification and 7th closest in weighted mapping (89.3%). In the Survey taken, Fairlawn was the 5th most representative of an Art Deco Apartment building.



Giani Manzil

Most representative of Art Deco Apartment Buildings
based on Perceptual Survey

Closest to exemplar based on Weighted Object Mapping

Figure 7.17 Giani Manzil- Apartment Building closest to exemplar based in Identification, weighted mapping and Perceptual survey

It is observed that out of the 61 buildings in the inventory, the top ten buildings closest to the exemplar display 75% to 93.82% of the features that make up the Exemplar. The Rusi Court/

Court View on the Oval in Bombay is closest to the Exemplar displaying 25 out of 28 features. In the weighted mapping, it is the Gyani Manzil in the Dadar -Matunga neighbourhood that comes closest to the exemplar displaying 93.82% proximity of the exemplar. In the survey too, Gyani Manzil emerges as the apartment building in Bombay best representative of Art Deco, with 47 out of 79 respondents choosing it so.

There is a considerable congruence between the top 10-12 buildings out of a relatively large pool of 61 buildings that even the survey largely corresponds to. Included in the buildings closest to the exemplar are buildings from all three precincts and beyond, which leads to an inference that there was a consistency of design direction for apartment buildings in the period under consideration.

Our findings show that as the buildings trail away from the exemplar, we see the isotopies (Enhancers and Nuancers) and some of the discontinuities (such as shafts and towers) dropping off. Despite this, the essential formants remain (flat roofs, cantilevers, eyebrows, bright colours), as do some of the discontinuities (balconies, horizontal accents, horizontal projections) all through the buildings in the inventory. Only four out of the 61 display a lack of symmetry. It is the presence of these Basic Objects that the buildings to be read consistently as Art Deco.

Basic Object Identification		Weighted Mapping		Survey	
Un-weighted		weighted			
Rusi Court/Court View	1	Giani Manzil	1	Giani Manzil	
Giani Manzil	2	Rusi Court/Court View	2	Rusi Court/ Court View	
Shinghi Bhavan	3	Shiv Shanti Bhuvan	3	Shivshanti Bhavan	
Fair Lawn	4	Palm Court	4	Palm Court	
Shiv Shanti Bhuvan	5	83 Mohamed Ali Road	5	Fairlawn	
Palm Court	6	Shinghi Bhavan	6	Rajjab Mahal	
83 Mohamed Ali Road	7	Fair Lawn	7	Shinghi Bhavan	
Swastik Court	8	Mahadev Bhuvan	8	Swastik Court	
Rajjab Mahal	9	Rao House	9	Sunder Mahal	
Sunder Mahal	10	Sunder Mahal	10	83 Mohamed Ali Road	
Mahadev Bhuvan		Rajjab Mahal			
Rao House		Swastik Court			

7.4.3 Apartment Buildings- Observations by Precinct

In the case of the precincts, one can make clearer observations. The Apartment building facades in the Oval Maidan precincts display the largest amount of isotopy. On the surface of the facades, one can see the maximum amount of ornament, stucco geometries, abstract lines, and even figural ornament with local or world referents.

In the Marine Drive stretch, figural ornaments or Nuancers are almost completely absent, although Enhancers in the form of abstract lines, speed/travel referents and signage can be readily identified. The Dadar-Matunga buildings and the other buildings in Bombay fall between these two poles.



Figure 7.18 Oval Maidan Precinct, 1936



Figure 7.19 Marine Drive Precinct, 1940s

Of the three precincts in the study, the buildings of the Oval display most affinity to the Exemplar followed by the Marine Drive and the Dadar-Matunga buildings. 19 buildings from other parts of Bombay were studied that displayed variations from great affinity as in the case of Shingi Bhavan to very little affinity as in the case of Normandie. Apartment buildings also tend to be set within plots with low rise, grilled compound walls. It is this grillage and ornamental gates that are designed using World Referents common to Art Deco age such as speed and travel. Local Referents are seen infrequently, as on the Oval and Marine Drive buildings that display reliefs or grille designs of sea and surf relating to close presence of the Arabian Sea.

7.5 Weighted Basic Object Mapping

Mapping the buildings of the inventory for Basic Objects using weighted scores allows for a comparison with the readings of Basic Object identification (un-weighted).

The survey that led to the determination of weighted scores for different Basic Objects identified used a perceptual understanding of the respondents to recognize Art Deco architecture by those basic features that resonated with them through memory and experience. This creates a semiotic environment in which both the Basic Objects may be perceived and the buildings themselves determined for their proximity to the exemplar.

When charted, we observe that both un-weighted (marked red) and weighted mappings follow a similar trajectory that validates the readings. We can observe a normalization of the weighted readings (marked blue in the charts below) that seem to alleviate certain anomalies that occur through simple identification over the inventory as a whole. This then allows us to discuss the findings based on their semiotic potential. Our readings of buildings as texts shall be based on the weighted Basic Object mapping.

7.5.1 Cinema Houses- Graded readings

There is an observable correlation between the un-weighted and weighted mapping of Cinema Houses in the inventory. The weighted mapping normalises the deviations of the un-weighted readings, based on simple identification.

The ten Cinema Houses closest to the exemplar stay within a shallow range of self similarity (between 96.92% and 70.63%). The ten furthest away from the exemplar show a relatively sharper drop, as both Basic Objects as well as their relative weights are less visible.

The cinema houses furthest from the Art Deco exemplar are those with facades that predated the period under study as well as those after 1948, showing Modernist interpretations with much less affinity to what we may determine as closest to Art Deco Cinema Houses in Bombay.

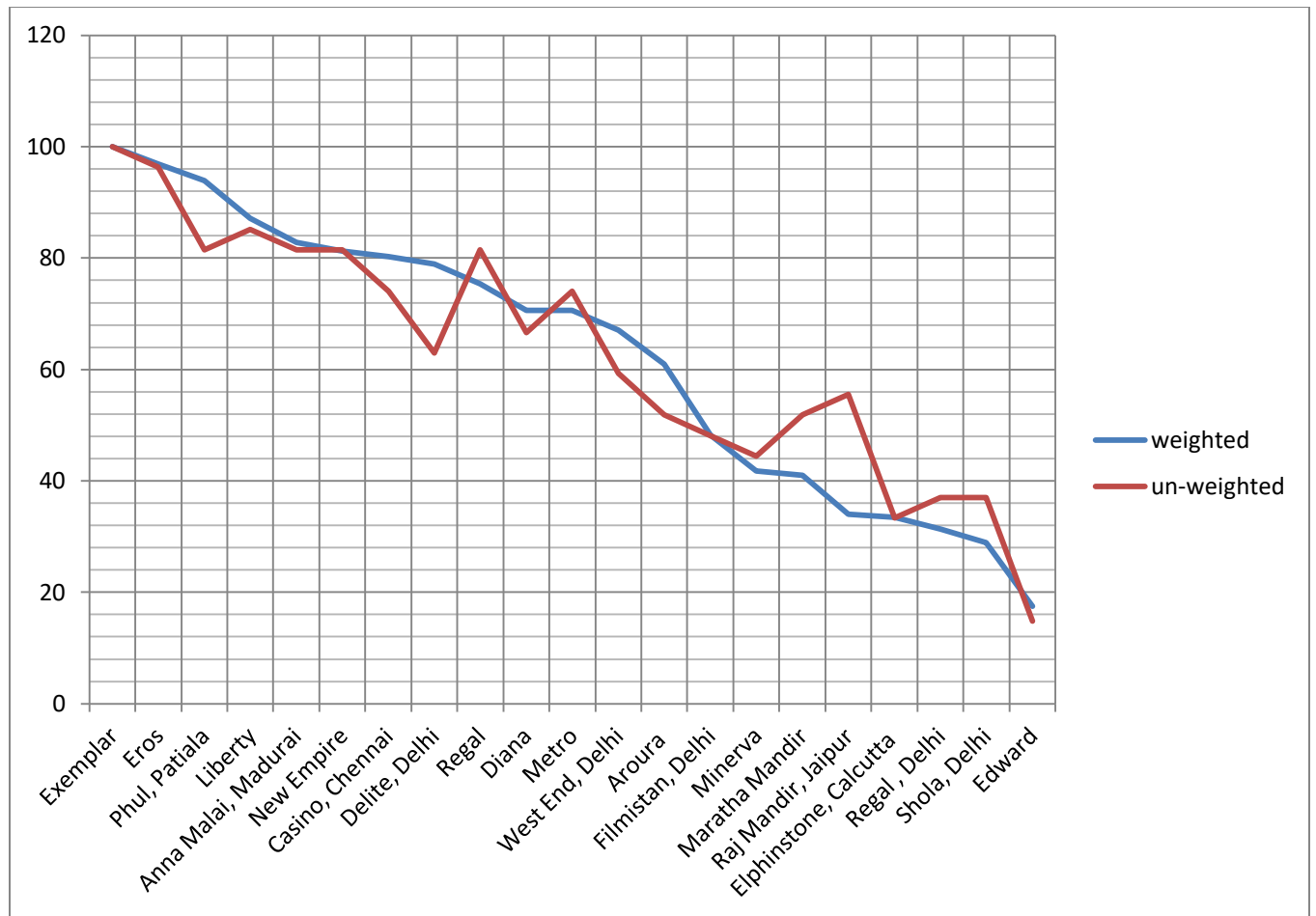


Table 7.1 Cinema Houses- Un-weighted and weighted Mapping

As has been mentioned earlier, the first Basic Objects to drop off are the Nuancers and the Enhancers; however it is the formants and discontinuities that remain vestigial and present even on buildings down the list. While this is broadly the case, in the specific instance of cinema houses, these Objects too start to drop off.

A Graded Chart shows there is a sizeable distance between the Cinema House closest to the exemplar and the one furthest away from the exemplar. This can be observed in the radar chart below, with the buildings closest to the exemplar clumped together while those furthest away form a relatively longer tail.

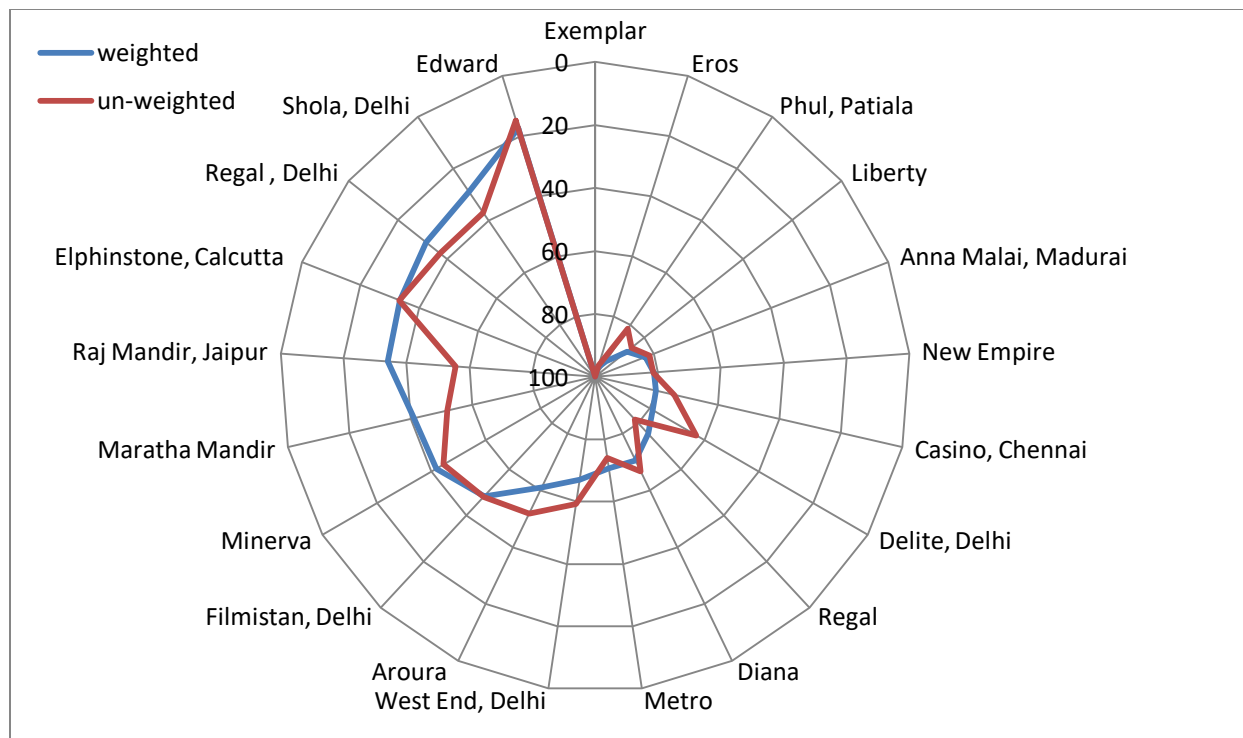


Table 7.2 Cinema Houses Radar Chart

(with 100 being the exemplar or the centre and 0 being the furthest away from the exemplar)

Even making a simple visual comparison between these buildings, as seen in the images below show how different the facades are from each other. We can therefore conclude that in the case of the Cinema Halls, the buildings that are identifiably Art Deco are from the period under study, ie. 1930-1949. The last of the cinema houses to follow the Art Deco was the Liberty in Bombay, completed in 1949. As can be seen this Cinema House is one of the most proximal to the Art Deco Cinema House exemplar, being the 3rd closest in our mapping. Both mappings and survey all correlate the top ten cinema houses as Art Deco. In this case, there seems to be a clear break between those buildings that are visibly Art Deco and those that are not.

We infer that the choice of making cinema houses with Art Deco characteristics was a trait of the period between the 1930s and the 1940s which could be correlated to the patronage of the Hollywood Studios of the time. The important South Bombay theatres were those that only showed English films. This would continue much after the 1950s. However, theatre design post independence starts to take more modernist directions in their architectural expression; making Art Deco cinema houses an architecture of their own time. So, as can be seen in the images below, Eros is identifiably Art Deco, while Shiela in Delhi is identifiably not.



Figure 7.20 Eros, Bombay, built in 1938
Closest to exemplar



Figure 7.21 Sheila, Delhi, built in 1961
19th Furthest from exemplar



Figure 7.22 Edward, Bombay built in 1926
20th Furthest from exemplar

7.5.2 Office Buildings- Graded readings

As compared to Cinema Houses, Office Buildings in the in the weighted Mapping are arrayed in a relatively shallow slope, indicating that a larger number of buildings display Basic Objects even as they are mapped as further away from the exemplar. This is also observable in the Radar Chart below.

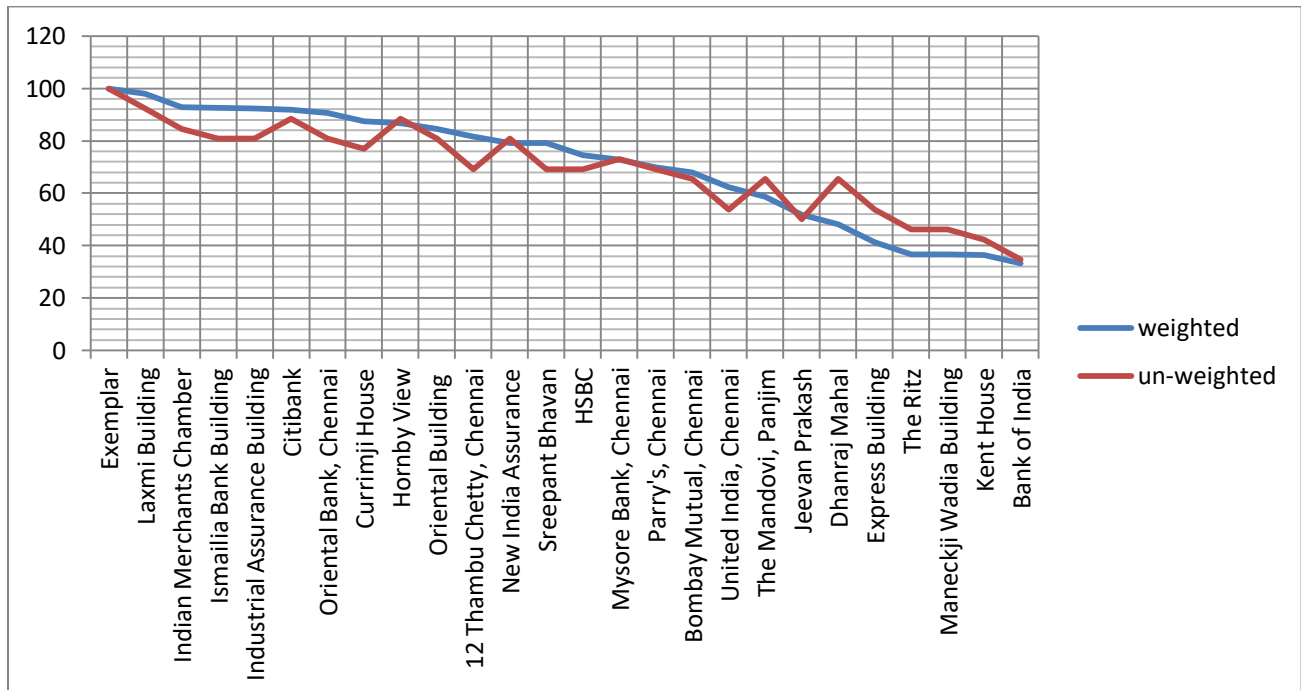


Table 7.3 Office Buildings, weighted and un-weighted mapping

It is interesting to observe that the buildings in the inventory from Chennai are all located closer together in the middle third of proximity to the exemplar. In comparison to the buildings from Bombay closest to the exemplar, the Chennai office buildings show both similarity and difference. They are all organised formally along an axis of symmetry and display a stepped, monumental massing, but are different in that they do display the king of isotopy that is seen in the office buildings of Bombay like the Laxmi Building or the United India Assurance Building.

In the case of buildings furthest away from the exemplar it is observed that essential formants and discontinuities undergo changes- the buildings are organised around asymmetrical massing, the ziggurat form no longer is visible, while more Modernist elements are seen on the buildings' facades, as in the case of the Express building or the Kent House. In both cases however, these are buildings built in the period under review. While these buildings do display 12-15 Basic Objects out of 26, they are not the ones most easily identified as Art Deco, as can be seen in the direction the weighted mapping (blue line) indicates.

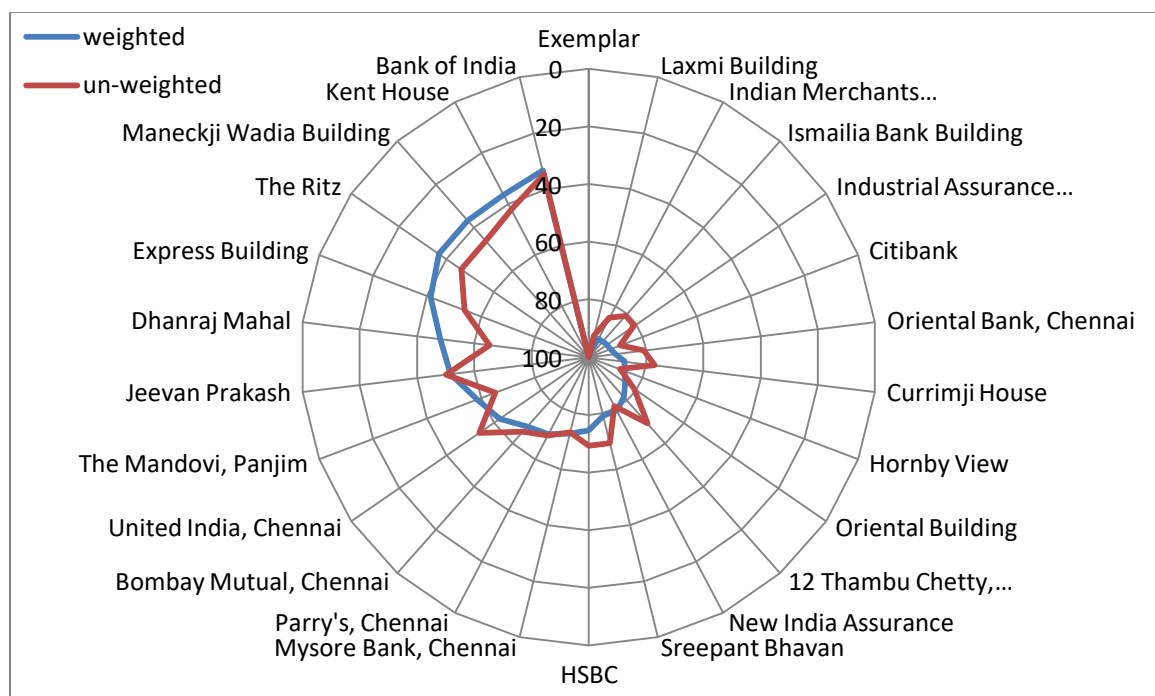


Table 7.4 Office Buildings Radar Chart



Figure 7.23 Laxmi Building, Bombay built in 1938

Closest to exemplar



Figure 7.24 Kent House, Bombay built in 1935

24th furthest from exemplar



Figure 7.25 Bank of India, Bombay, built in 1938

25th furthest from exemplar

7.5.3 Apartment buildings- Graded readings

The comparison between the Basic Objects identification (un-weighted) and the Basic Objects Weighted Mapping for Apartment buildings in the inventory demonstrate best the value of the Perceptual Survey carried out.

While the weighted trajectory does tend to normalize the more deviating line of the un-weighted trajectory of proximity, we can observe the corrections at both the proximal as well as the distal end of the chart. Where the apartment buildings are arrayed closest to the exemplar, the weighted mapping enhances the scores as compared to simple identification, bringing the perceptual readings of what elements/Basic Objects best represent Art Deco Apartment buildings. These buildings are more easily read as Art Deco buildings, validating their position as proximal to the exemplar.

Quite the reverse is observed in the buildings furthest from the exemplar, where the weighted readings, bring down the scores as compared to simple identification. While both trajectories follow a similar path, these corrections provide a perspective by which these buildings may be appreciated.

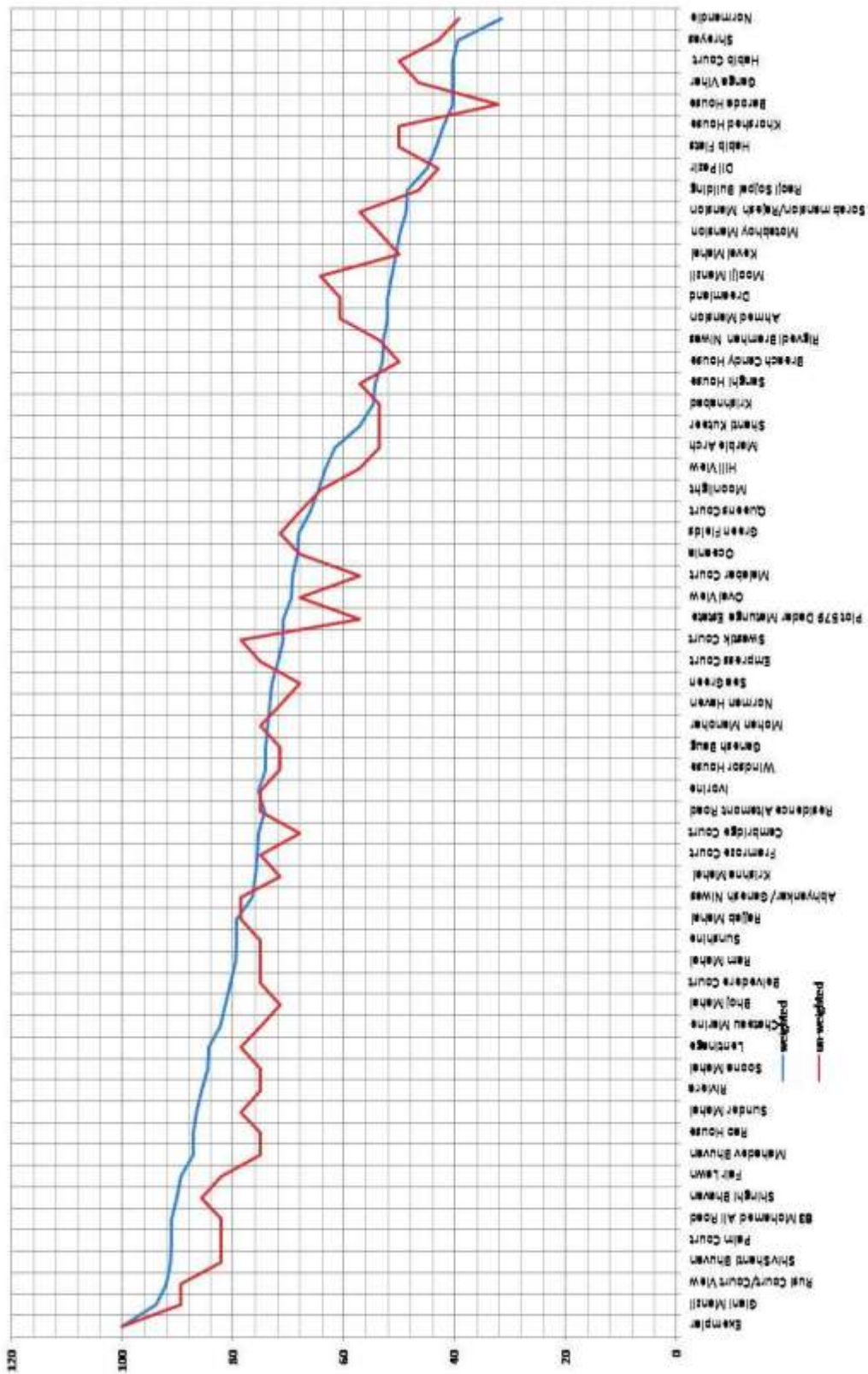


Table 7.5 Apartment Buildings, weighted and un-weighted mapping

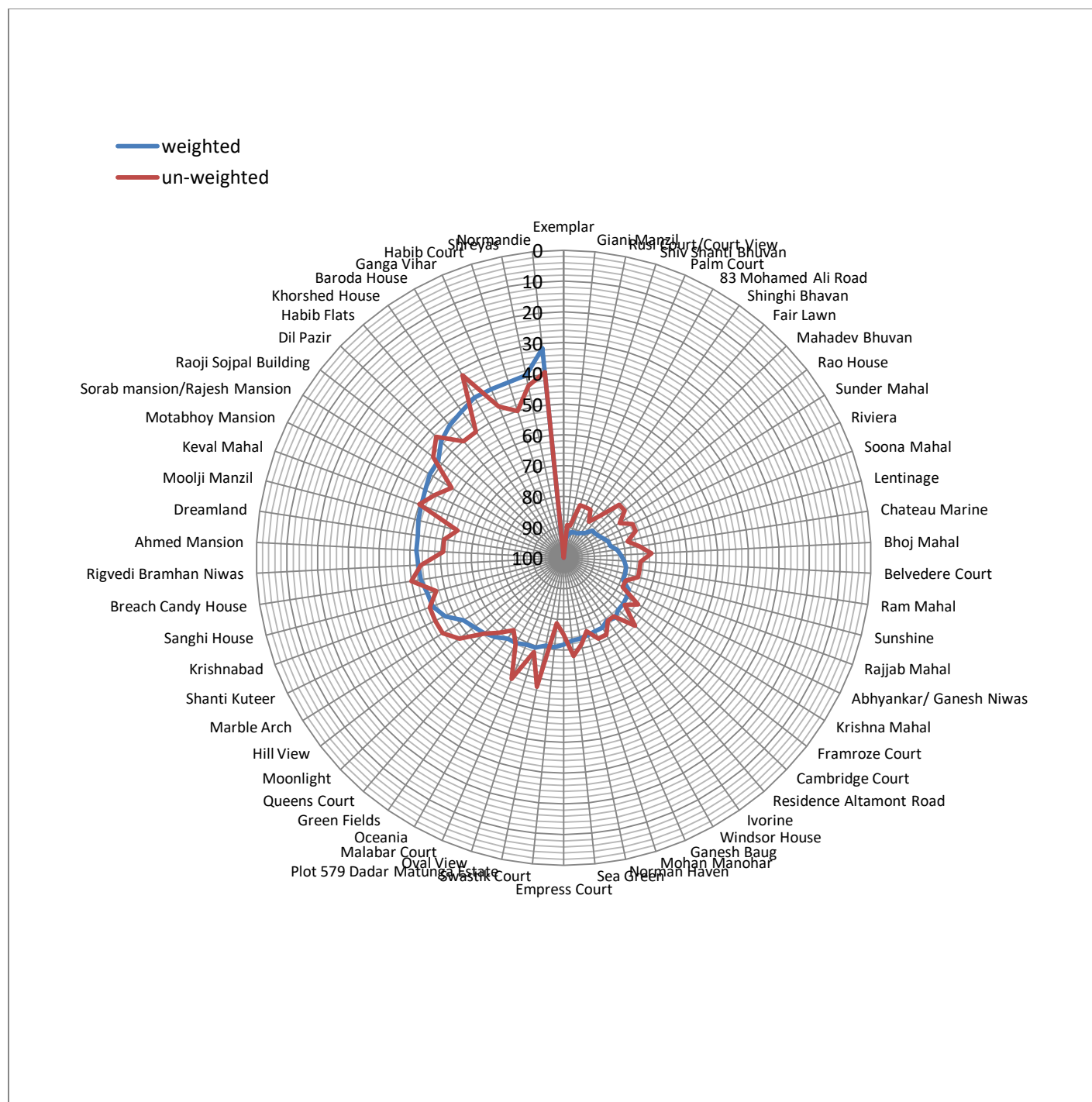


Table 7.6 Apartment Buildings Radar Chart

As compared to the Cinema Houses and the Offices buildings, the relatively large number of Apartment buildings in the inventory also demonstrates the variations that buildings of the period had in terms of their facades. As mentioned earlier, while it is possible to discern broad trends in terms of the precincts that apartment buildings may be located in, each building calls for its own readings.



Figure 7.26 Gyani Manzil, Dadar-Matunga, built in 1937
Closest to exemplar



Figure 7.27 Shreyas, Marine Drive, built in the 1940s
60th furthest from exemplar



Figure 7.28 Normandie, Bombay, built in the 1930s
61st furthest from exemplar

Both in the buildings closest to the exemplar, as well as in the buildings furthest away from it, buildings from all 4 sets of locations can be observed. So while one may find relatively high degrees of isotopy in the Oval buildings, one would also find some buildings in the precinct with almost no isotopy discernible. Shreyas a building from the Marine Drive precinct is second to last in the mapping, showing how far away from the exemplar it is. As can be seen in the Radar Chart, the gradations of the apartment buildings move away from the exemplar in a fairly long tail.

The further away from the exemplar, one observes the discontinuities dropping off, the symmetry no longer followed and purely functional (Modernist) buildings elements predominate. The articulations in the buildings no longer follow aesthetic impulses but simply provide protection against the weather, as in the case of Normandie, a building furthest from the exemplar.

7.6 The Relevance of the tool and conclusions

We have developed a tool of identifying Basic Objects from the Exemplar, against which buildings of the period 1930-1949 in Bombay have been considered. This tool breaks down semiotically into formants, discontinuities and superimpositions. Those form actants in play in the intra-objectual relationships of the buildings as object/body and create the semiotic resources for reading them as text. Each actant or Basic Object can be identified for their presence or absence on the buildings under study. It is found that most of these are present on most of the buildings studied so far. This makes the tool relevant for more widespread use. It seems that

similar results can be obtained. Of course the larger the inventory, the better rounded as well as nuanced the conclusions will be. This is an ongoing process.

We therefore conclude that this tool can be applied to all types of buildings (We have studied residential, commercial and cinema houses); as well as to specific precincts sites to make internal comparisons (Oval Maidan, Marine Drive, Dadar-Matunga, etc.).

Enhancers and Nuancers form isotopy, most prevalent in cinema houses first and office buildings second. These building types do rely on visual communication as a means of establishing a sense of place in the city. However, apartment buildings during this time are not very far behind, establishing most buildings of the periods as self-conscious of their role as communicators in the urban landscape. This is seen especially in the Dadar-Matunga buildings, a precinct that has not really been examined as much as the Oval or the Marine Drive.

While in the Marine Drive buildings, the functional attributes are more dominant, resulting in the better creation of an urban fabric through inter-objectual relations, isotopy is seen the least on these buildings. They serve as a background to the Queen's Necklace seafront, and despite the several corner buildings do not generally call attention to themselves, with the possible exception of buildings such as Soona Mahal.

Figurative semes (Nuancers) are an infrequent attribute, but abstract semes (Enhancers) are seen in most of the buildings under study including several residential ones. They are present on most office and cinema buildings.

A distinct nucleus of discontinuities (entrance, marquee/signage, shaft and tower) is present on several buildings, but does tend to taper off in the case of the chronologically later buildings. Several attributes are present almost universally in cinema buildings (tower, marquee, entrance, ground plane and abstract isotopy). We can conclude a paradigm or formula is present for the design of cinema houses and variations are local to create individual differences. Figurative isotopy is also present on several of the cinema houses studied, once again an essential device for communicating the glamour of 'show-biz'.

Climatic adaptations (the use of balconies, cantilevered verandas, overhanging roofs, chajjas and ‘eyebrows’ are present in most of the buildings irrespective of their usage, except for cinema houses. Their space being totally interior, given their function there is a separation between interior and exterior that allows the exterior to be considered as a decorated shed. Attributes of horizontality (ubiquitous in residential buildings) are not as prevalent in commercial and cinema buildings where vertical dynamics dominate.

Bombay was not the only city to have ‘Art Deco-ness’ in cinema houses that reflect most of the features of the Exemplar. Similar buildings in other cities like Patiala, Madurai, Chennai and Delhi also display full blown Art Deco characteristics.

The commonly perceived recognition of Art Deco cinema houses in Bombay is not due to their exuberant ornament, but more because of architectural form and building elements that highlight entrances, break the skyline with towers and dominate street corners.

As the buildings move further away from the Exemplar, stepped forms, vertical accents and nucleus become more vestigial and eventually are seen no more. What remains are flat roofs, entrances opening on streets and marquees. The bright colours, abstract lines and stucco geometries are still allow buildings to be identified as Art Deco.

For comparison, cinema houses that predate the timeline (1920 to 1948) as well as those built in the later seventies are included in the study. Both these clearly form outliers to those closest to the Exemplar. We conclude that the period of Art Deco cinema houses was a limited one, that faded out in the 1950s and after for a more modernist approach.

In the case of Office Buildings of the period, a large number of variations are noticed, even from the same time period. Whereas a significant number of buildings have clear affinities to the exemplar, many buildings also seem to buck the trend by losing some of the Basic Objects that help identify them as Art Deco.

If one looks at two buildings on Pheroze Shah Mehta Road- Kent House (see above) and Jeevan Prakash one sees that the characteristic stepped form, the arraying of the building around frontal or diagonal symmetry are no longer visible. Even Enhancers and Nuancers are absent so a significant isotopy can no longer be discerned. Kent House is ideally located for diagonal symmetry and the creation of a nucleus facing two streets. Eschewing verticality completely, it swings along the two streets it abuts in a series of horizontal layers of ribbon windows. The stairwell, normally the site of the nucleus is tucked away from the façade completely. This is interesting as just a couple of blocks down are the Laxmi and Citibank Buildings, both paragons of Art Deco-ness, that in our study come closest to the Exemplar. All three buildings have the same timeframe.



Figure 7.29 Jeevan Prakash, Pheroze Shah Mehta Road, Bombay, built in the 1950s

Jeevan Prakash too, has an asymmetrical take on the diagonal of the two roads on which it is sited with vertical accents on one road and horizontal accents on the other. The stairwell is pushed to one side and does not dominate, although it is clearly delineated.

We can conclude that by the time the new business street of Pheroze Shah Mehta Road was being laid out, architects had already moved on, away from the Art Deco that was prevalent in the decade earlier into a more modernist/functional expression of commercial facades.

Bombay's Art Deco apartment buildings display variations in affinities to the Exemplar. While the closest are the Oval buildings, several display modernist functional elements dominating the form.

Art Deco apartment buildings fit in neatly in the urban fabric (unlike iconic cinema houses and office buildings). This is seen in the form of floor bands that match neighbouring building lines. The quiet urbanity is seen in the respect these buildings have for following the set-back lines and matching heights of adjacent buildings. This is due to building regulations at the time but in turn has defined the typology of Art Deco apartments. When buildings abut two streets, diagonal symmetries and a valorised nucleus are observed.

Apartment buildings begin to transform relatively slowly, as compared to office buildings or cinema houses. Basic Objects become vestigial or fall away, and there is a retention of presence of an overall structure that still echoes the exemplar. Change is seen in the form of asymmetry, as in the case of Dil Pazir, although the dominant horizontalness and cantilevered formants still remain. RCC is boldly used, both as function as well as climatic protection. The stairwell and entrance are no longer visible. The Enhancers are seen in the form of running railings along balconies that evoke ocean liner decks. This makes Dil Pazir show affinities to the Marine Drive Buildings, but there is no overall isotopy to be made out, and the building is located at the furthest from the exemplar.

As the buildings in the inventory move further and further away from the exemplar, the stepped façade and the dominance of the nucleus are the first to go. Ornament in both abstract and figurative form also diminishes. The functional horizontalities get foregrounded as can be seen in the case of Normandie on Carmichael Road (see above), where the elevation of the building seems to have been the result of extrusions of the plan itself.



Figure 7.30 Dil Pazir, Bombay, undated

Buildings in all three sub categories are still recognised as Art Deco much after the decorative or valorised features have fallen into disuse. This is clearly seen in the present study that shows the dominant features of the period to be the architectural form and the building elements arranged in bi-lateral symmetries with central entrances and stepped formations, rather than the architectural ornament or figurative designs superimposed on them.

The sub categories of cinema houses, office buildings and apartment buildings were validated by the Exemplars created for each. Several buildings from the inventory show close affinity to the Exemplars allowing for the “Art Deco-ness” to be attributable to them.

Chapter 8 Conclusions

We present our conclusions in two parts- the first part responds to the research questions set out at the beginning of the thesis. In the second part we present conclusions about Art Deco architecture in Bombay based on the three building types studied- cinema houses, office buildings and apartment buildings. These may be read as the extension of our findings as delineated in Chapter 7 and are re-contextualized into the larger discourse about Art Deco in Bombay. In their answers we generate new knowledge about the subject and fill in the gaps identified at the outset. We conclude by discussing the contributions that such knowledge has made to the field, we outline future directions that this research can lead to and make a case for the contemporary relevance of studying the semiotics of Art Deco architecture in Bombay during the period 1930-49.

8.01 Reading Buildings as Semiotic Texts

How may buildings be semiotically read as texts (a built representation of a visual language)?

The buildings that constitute our area of study are the Art Deco buildings in Bombay from the period 1930-1949. In the general perception (and in popular literature), the buildings of the period from the 1920s onwards are referred to as Art Deco. It has been the purpose of our research to see whether this is so, or whether the definition of what is an Art Deco building is more specific. Using the theoretical base developed in Chapter 4, we have attempted to discern this.

Buildings of the period in Bombay provide us with two advantages-

One, that so many buildings were built in a relatively short period of time. This was a time of urban expansion and consolidation of the city as a center for cosmopolitan urbanity as well as a site for physical change, given the several reclamation projects on the Backbay, Bombay's southern and western edge, as well as the planned projects in the north of the city.

Two, that serendipitously, several factors came together to create a semiotic consciousness among both practitioners and users of the buildings that reflected their aspirations in terms of modernity, cosmopolitanism and internationalism, all together that allowed for the many buildings (and of different typologies) to be built in such a self similar manner, communicating, as it were, in the same visual language.

It has been our endeavor through this thesis to find ways of reading buildings as texts. In literary theory, any object can be 'read', as all objects project a set of signifiers that transmit meaning. Such a thesis has not been specifically applied to reading Bombay's architecture, and it has been our attempt to do so. The means we used were semiotic: considering an Object/building to be a 'bundle' of signs that can be perceived and comprehended by the viewer/user. Any object projects signs, either as an object in itself with relation with other objects or based on various elements that constitute the object. These inter-objectual and intra-objectual relations elicit semiotic meaning.

8.02 Synchronous Readings of Art Deco Buildings

Can semiotic potential be identified through synchronous readings?

We have attempted to read several examples from the period, using three building types, to make simultaneous or synchronous readings. As has been elaborated in Chapters 5, 6 and 7, we developed the tools for this mapping and have used it over the many buildings that populate an inventory of Art Deco buildings from the period.

These readings background temporality or the historical context as a specific strategy, to understand the buildings by themselves, as objects having a collection of meaning. Instead of addressing the era by the few ‘bright sparks’, we looked at the buildings outwards, from the fountainhead of an exemplar, and mapped the buildings in proximity to and distance from the exemplar.

We have, in the process been able to draw new conclusions about such iconic buildings as well as foreground new buildings that should be looked at afresh by contemporary researchers of this architecture. Our conclusions are based on the collective readings of these buildings as a visual language, to determine, ‘so to speak’, those that speak with fluency, those with effort, and those that can be determined to be a ‘pidgin’ or a ‘creole’. These differences are explained further when we discuss the building typologies themselves.

8.03 The Culturally Salient Object Exemplar

Can the architecture of the period and location (Bombay, 1930-1949) be collectively mapped to identify an exemplar/s for that period and location?

The business and commercial heart of the city was still the area around the erstwhile Fort, where connections to the port lands still mattered for the many banks, insurance companies and business houses who set up their headquarters around the esplanade and the main arterial roads of the southern peninsula. Commercial imperatives had their own cultural salience in terms of the facades of office buildings, which differed from the more quotidian apartment houses. These office edifices tended towards monumentality, formal massing and an iconic gravitas that showed them abreast with the rest of the world.

Building up since the last years of the 1900s the changing face of recreation came to focus more and more around the motion picture. Cinema houses has started to come up in the first decades of the 20th century, but it was in the 30s and 40s that they really came into their own, both due to their immense popularity among almost all levels of Bombay society but also due to the active promotions of the major Hollywood Studios who patronised the new cinema houses built in the manner of Hollywood. The architecture of the cinema houses in a sense epitomises Art Deco in most of the available literature.

We therefore, based on the cultural mores of the age, selected cinema houses, office buildings and apartment buildings as three separate sub-categories in the larger category of Art Deco for an independent mapping. In order to do this, we had to have exemplars for the three building types, which we derived by reading the available literature for their specific descriptors (as can be seen in Chapter 5). These exemplars were ideal versions of cinema houses, office buildings and apartment buildings as written (textual) descriptors.

These texts in turn yielded key elements, or Basic Objects that were used for mapping their presence or absence on individual buildings. We were thus able to include several variants on the same typologies without having to pre-filter them for inclusion. This was useful to us in an extended sense, because it provided a means by which we could even map buildings, both from outside of the time period under study, as well as from outside Bombay, as equals. This allowed for inferences about the rest of the country, as can be seen in Chapter 7.

8.04 Signification of Bombay's Art Deco Facades

What is the nature of signification offered by Bombay's Art Deco building facades?

What is the nature of signification offered by Bombay's Art Deco building facades? Our Object analysis (see Chapter 4) allowed us to read signification on the facades through a breakdown into plastic formants, discontinuities and superimpositions. These formed intra-objectual relations on the each individual façade that elicited a narrative syntax both self-similar when observed inter-objectually but with thematic variations when examined façade by façade.

Formant (and sub-formants), discontinuities and superimpositions also formed actants that created oppositions, that either aided or hindered the readings of basic objects on the facades. “One actant can be manifested by several actors and, conversely, one actor can at the same time represent several actants” (Felluga, 2011).

The formants activated the basic massing of the building facades and related to the street and open spaces as well as neighbouring buildings. For example, formants denoted (through the identification of flat roofs, cantilevered balconies and eyebrows) the use of Reinforced Cement Concrete, a building material and structural system that was just coming into mainstream use by the end of the 1920s. The possibilities of the materials allowed for the flat roof to become both possible and usable in a city like Bombay with its heavy precipitation. The cantilevers that define the horizontals- floor bands and balconies are also the resultant of frame construction.

It is on this substructure that the discontinuities act out their individual roles as visually communicative helpers to the user/viewer. The nucleus (prominent entrance, signage, shaft and tower) act together and separately, guiding the user inside and providing an identity on the city skyline. The entrance and signage together denote function and direction to the potential visitor, but also connote class and aspiration both to the observer and the owner/ inhabitant alike. The shaft and the tower normally define the axis of symmetry around which the sub-formants are arrayed. They work best when they act as one, as in the case of the nucleus located at the corner of two streets, making the façade span out in two wings around a diagonal symmetry

The sub-formants are articulated by their own discontinuities- the ground floor is normally delineated differently from the upper floors, the cantilevered projections and balconies create a floating effect making the floors rise above the streets below. The balconies themselves denote the semi outdoor spaces that are the private domain of the inhabitants, but also indicate the floor bands that rise one above the other. It is these bands that match with neighbours in the Art Deco precincts, and create intra-objectual harmonies in their urban contexts.

The superimpositions are the aesthetic isotopy that is overlaid on both formants as well as discontinuities that form actant helpers when seen as Enhancers- abstract lines and geometries that follow and enhance the discontinuities already present. Nuancers, or figurative murals or bas relief sculptures on the other hand have their own independent functions of conveying specific

themes based on local or world referents. On office buildings the reliefs are corporate signifiers marking their authority on the public realm; on cinema houses, they may indicate the exotic-typically Art Deco referents influenced by Hollywood, channelling Egyptian, Inca or Aztec figurines or even Indian dancers; while on the apartment buildings, themes connoting the tropics the presence of the sea, and travel, denoted by porthole windows, ocean line railings or even reliefs of sea waves and surf.

8.05 Self-similarity and Semiotic Meaning

If the praxis of a period leads to the construction of self similar examples, how may such examples be collectively read for semiotic meaning?

Read as building types against each other, the identity of each can be signified by difference. The Basic Objects that are found in cinema houses, office buildings or apartment buildings may be considered semiotically denotative to that building type, which then can be read as connotative at two levels- the first is denotative to the function of the buildings while the second is connotative to the various influences that Art Deco accepted from local, and world referents. The analyses of Basic Order Identification and Basic Order Mapping lead us to conclude the following:

Although there was a specific notion of how an office building during the time should look, there also seem to be several influencing cross currents that the architects of the time were subject to, which results in buildings that could substantially vary in their formants, discontinuities and superimpositions. In the case of office buildings, the variations we see are the greatest given the same time frame.

Re-contextualising this by bringing a historical context back, we can make observations about public buildings in the city of Bombay over the last half century before 1920. At this time, Imperial buildings displayed at various periods and sometimes simultaneously the neo-Classical, the neo-Gothic, the Indo-Saracenic and the Edwardian Baroque. After the 1920s, public architecture was largely the domain of private, not government enterprise, which had more international imperatives when it came to the visual syntax of the building façade. As such after

a brief return to the neo-Classical, office buildings were designed in the form we now refer to as Art Deco.

This can clearly be seen in the mapping of the office buildings in the inventory, Where the facades closest to the Art Deco exemplar are all self-similar in their monumental formality. In this we see that the facades of offices in Bombay and Chennai are quite self similar, as compared to other office building in Bombay. The array of buildings that came up on the mini business district of Pheroza Shah Mehta Road display the maximum variations to the Office typology, many of the buildings at the time had already begun to adopt the massing and features of early Modernism, with vestigial respect, especially to the discontinuities and dropping the superimpositions altogether. In terms of a graded membership, office buildings have a long and fuzzy tail, losing the Basic Objects that once made them proximal to the ideal, and moving into another style altogether that would become the norm in the 1950s and beyond.

8.06 The Perceptual Survey and the Socialization of Signs

The Perceptual Survey was conducted to determine which of the Basic Objects were deemed to be most representative of Art Deco architecture by a number of respondents who knew about Art Deco buildings and were aware of its basic features.

The elements that are most easily perceived by the respondents as Art Deco do, to a large extent, tally with the elements present with the greatest frequency on the buildings. In both in the case of simple object identification for presence or absence, as well as the elements picked out by the respondents, it is observed that -

- Basic Objects related to the building frame and delineation (formants and discontinuities) are perceptually more significant to Art Deco-ness than those Basic Objects superimposed on them.
- Isotopy in the form of Enhancers and Nuancers is a distant third in comparison.

This does contrast with the accepted or stereotypical view that Art Deco consists of buildings that are covered with and identified by their ornament. It is this lasting perception of formant and

discontinuities that explains why buildings continued to be referred to as Art Deco even when most of the superimpositions had become vestigial. The Weighted Basic Object Mapping allows for more a more textured appreciation of the buildings of the period in terms of their proximity to an Art Deco exemplar.

8.07 Cinema Houses defining a semiotic for a ‘Golden Age’ for Art Deco in Bombay

In Cinema Houses we find that signage, marquee, prominent entrances are ‘actants’ - visual objects that both denote as well as connote their ‘core’, that is their function as places for entertainment, as well as their visible presence in the urban fabric.

Based on our identification of the basic objects on all of the ten cinema houses closest to the exemplar, we find that the Formants (Flat Roof) and Discontinuities (Stepped Form, Vertical Accents, Shaft, Discontinuous Base, Entrance Portal, Marquee/ Signage) that are the communicators of the semiotic meaning of the cinema-going experience. Ornament and Decorative superimpositions (enhancers and nuancers), while useful are supplemental in conveying the meaning of the facades.

The secondary position of superimpositions is further validated by observing buildings furthest from the exemplar like Raj Mandir Jaipur (1976), and Sheila Delhi (1961) (Fig.7.21). Here, despite the facades being covered with superimposed ornamentation, they would not readily be identified as Art Deco buildings as many formants and discontinuities that make cinema houses closest to the exemplar are no longer visible. Chronologically, they are buildings in the inventory outside of the period under study. In the case of cinema houses therefore, we conclude that identifiably Art Deco buildings do not last beyond 1949, when the Liberty cinema was completed. This also holds good for cinema houses like the Regal, Delhi (1932), Edward, Bombay (1926) (Fig. 7.22), despite being in the period under study and the Elphinstone Calcutta (1907) that display neo-classical features.

When only the cinema houses in Bombay are observed, the proximity to the exemplar follows a chronology. The first seven most proximal are all from the period under study, while the last

three (7 –10) fall outside of this. Maratha Mandir (1958) (Fig. 7.4) and Minerva (1971) are located after 1949, while Edward (1926) precedes 1930. We conclude that characteristically Art Deco cinema houses in Bombay were the product of the period under study, and lost several basic features, or were replaced with other features from the 1950s onwards.

Of the cinema houses built outside Bombay, Phul Patiala (1930s) (Fig. 7.6), Annamalai Madurai (1940s) (Fig. 7.5) and Casino Chennai (1941) are closest to the exemplar (3, 4, and 8 respectively) and display all the formants and discontinuities similarly displayed by the cinema houses in Bombay. As the buildings recede from the exemplar we see that these also are built after 1949 (except Elphinstone Calcutta that precedes 1930). There is one exception to this- Regal Delhi while completed in 1932, in the peak decade when most Art Deco cinema houses came up, is built with neo-classical features. This is explained by its location, built within the concentrically planned Connaught Place, part of Lutyen's Master Plan for New Delhi that was being built at the time also had the selfsame neo-classical features.

In our inventory, we had chosen cinema houses from both outside Bombay and outside the period under study to bring richness to our research. We now conclude that including these buildings has allowed us to validate our findings that Art Deco cinema houses are a product of their age. As observed, Cinema Houses that predate 1930 (Edward, Elphinstone) and those built after 1949 (Maratha Mandir, Minerva, Minerva, Raj Mandir) both are located at the greatest distance or remoteness from the exemplar. We therefore conclude that Indian Art Deco Cinema Houses enjoyed a 'Golden Age' specific and limited to their own time, and examined connotatively expressed the aspirations and optimism of the time (through their common Basic Objects) as well as valorized the new forms of building construction and new materials (RCC, glass, colourcrete) that were making their way centre-stage.

8.08 Office Buildings as resultants of eclectic choice-making

Based on the mapping, we find that of the ten office buildings closest to the exemplar, 9 are from Bombay, while one (Oriental Building, 1935) is from Chennai. In all these buildings, formants (flat roofs), discontinuities (stepped form, monumental, symmetry, shaft, prominent entrance, vertical mullion, vertical accents, and street opening) and superimpositions (ziggurat, abstract lines, stucco geometries) are present.

Office Buildings closest to the exemplar are built in stepped layers like ziggurats and in several cases proclaim their presence by the preference for masonry clad rather than coloured and plastered finishes. In this they connote a mercantile presence and an affinity with the Bombay's grand public buildings of the 19th and early 20th century, essentially imperial projects. This affinity also relates to the location of the buildings on the central business spine in Fort, South Bombay- on the Hornby Road, the present DN Road and MG Road. These buildings, on what is popularly known as the Heritage Mile were all built between 1885 and 1920, and presented neoclassical facades. Most of these buildings also had sloping roofs on timber trusses, clearly denoting the period before RCC construction became common.

In our inventory, the Laxmi Building (1938) (Fig. 7.9), Citibank (Bombay Mutual) (1935) and New India Assurance Building (1936) amongst others also have masonry facades. They are also located either along or perpendicular (on Pheroza Shah Mehta Road) to this spine. In this respect, Art Deco office buildings are different from the recreational *joie de vivre* of cinema houses or brightly coloured apartment buildings. We conclude that these differences connote a businesslike formality through their monumentality and symmetry. 8 out of the top 10 office buildings straddle two perpendicular streets. The further away from this business spine, we find that office buildings display non-masonry (plastered) finishes, although they are never as brightly coloured as apartment buildings. The one exception to this is the masonry clad Industrial Assurance Building built on a prominent street junction in Churchgate, whose presence, along with the Eros Cinema dominates the urban space.

Office buildings are further emphasized by Enhancers seen on all the ten buildings closest to the Exemplar. These enhance the facades' most identifiable features with stepped profiles massed

like a ziggurat, abstract lines enhancing the vertical articulation and stucco geometries forming speed lines or highlighting the symmetry, effectively emphasizing monumentality.

Several buildings, especially those built by insurance companies have connotative signs in the form of Nuancers- figurative relief murals in stucco or stone on their facades, making local referents, specifically valorizing Indian labour. The use of the clock as a public symbol is also seen on some office buildings, signifying discipline both in the workplace as well as in the public sphere.

We observe that despite the above, formants and discontinuities dominate superimpositions and isotopies in Office buildings. This makes buildings without identifiable ornament still recognizable as Art Deco buildings. In this respect Office buildings tend to be similar to Cinema Houses.

Office buildings from outside Bombay also follow the monumental features described above. Several of the bank and insurance buildings from Bombay have counterparts in Chennai, most notably the Oriental Building, Bombay (1930s) and Oriental Bank, Chennai (1935) (Fig. 7.10); and Citibank (Bombay Mutual), Bombay (1935) and Bombay Mutual Life Assurance, Chennai (1953). While the earlier pair are contemporaneous the latter pair are separated by nearly two decades. In this case, the Bombay Mutual Building in Bombay follows the lines of the commercial buildings on both the Hornby Road as well as the Pherozeshah Mehta Road and has in its masonry facade and delicate superimpositions, while the Bombay Mutual Building in Chennai is a monumentally stepped ziggurat with a prominent entrance and nucleus culminating in a clock tower (like the Industrial Assurance building in Bombay, 1940). The Chennai building has vertical fenestrations and vertical accents but neither enhancers nor nuancers. This is more in keeping with the Modernist tendencies of architecture in the 1950 that eschewed ornament, but still had very identifiable Basic Objects like stepped forms, symmetry, shaft, and prominent entrances that allow us to call it an Art Deco building.

When the buildings graded from the proximal to the distal are seen chronologically we find that the 'Golden Age' conclusion reached in relation to the Cinema Houses, does not apply in the

case of Office buildings. Whereas the top ten office buildings do conform to the period under study, the latter 15 are chronologically diverse, in that some later built offices show better Art Deco features than some built in the period 1930-49.

This dichotomy is best observed in the Kent House (1935) (Fig. 7.15) and the Bank of India Building (1938). Both buildings show almost no Basic Objects in common with the top ten, and yet predate some of the most characteristically Art Deco office buildings in the inventory. We conclude that the typology of the office building during the period under study was eclectic. Even on the same side of Pherozeshah Mehta Road, we find the contemporaneous Laxmi Building (1938, closest to the exemplar), Citibank (Bombay Mutual) building (1935, 3rd closest to the exemplar) and Kent House (1935, 2nd furthest from the exemplar in a sample of 25).

Looking at all the buildings in the inventory, one sees this eclectic choice-making in a variety of ways. We have already pointed out the affinity to the business district. Buildings near Bombay's Marine Drive such as Indian Merchants Chamber (1940, 4th closest to the exemplar) and the Express Building (1950s, 6th furthest from the exemplar in a sample of 25) show widely differing facades, the former being a characteristically Art Deco building, while the latter is an asymmetric Modernist cuboid that would not be identified as Art Deco. These differences can also be attributed to the individual design tendencies of their architects. The firm of Master Sathe and Bhuta (Laxmi, Citibank/Bombay Mutual, Industrial Assurance, New India Assurance) have more office buildings closest to the exemplar, whereas the buildings designed by G B Mharte (Express Building, Jeevan Prakash, Bank of India) display Modernist tendencies and are furthest from the exemplar. This however is a tentative conclusion and should be validated by further research, examining the oeuvre of both architectural firms.

8.09 Apartment Buildings- a template for Art Deco as urban fabric in Bombay

Apartment Buildings in the period 1930-1949 form the urban fabric, and the facades lining the streets express this collegiality. Often the result of planning exercises by the City Improvement Trust, they display the uniformity, harmony and self similarity that result from building regulations. In many cases the building heights and footprints were predetermined for a

neighborhood that gave it sameness even while each individual building facade was designed differently.

This self-similarity is a common thread to most of the apartment buildings in the inventory. Whether facing the street on one side or straddling two perpendicular streets, apartment buildings display inter objectual relationships with the neighbours on either side together forming a continuum by which they can be appreciated. Precincts are therefore identified as such.

Our findings show 15 out of 28 Basic Objects (53.57%) present on all of the ten apartment buildings closest to the exemplar. These include most formants (flat roofs, cantilevers, eyebrows, bright colours, balconies) and discontinuities (shaft, balconies, horizontal accents, horizontal projections, floor bands, abstract lines, symmetry, prominent entrance, discontinuous base), and some isotopies (abstract lines, stucco geometries, speed/ travel motifs) as well. Twelve apartment buildings that are closest to the exemplar display between 22-25 out of 28 Basic Objects (78.57% -89.29%). 13 building thereafter (from 13th closest to 25th closest display 21 out of 28 Basic Objects (75%). These include several buildings like Empress Court, Sunshine, Chateau Marine, Soona Mahal, Riviera and Ram Mahal that are normally highlighted as canonical Art Deco buildings. Seen together, this is an identifiable template for Art Deco apartment buildings in Bombay that, despite the relatively larger number of buildings in the inventory (61) is largely adhered to.

What differentiates the lower 15 from the top ten is the clear dropping off of both enhancers and nuancers- the basic objects that are the most easily read connotative signifiers are the first to go. While the formants and discontinuities continue from the top ten. Most of the buildings still appear to have distinct Art Deco features. There is a gradual dropping off of Basic Objects, and it is only when the distal 10 or 11 buildings are observed that we find the ‘template’ mentioned above breaking down. Furthest from the exemplar are apartment buildings that do not show the characteristic stepped form, streamlining, nucleus (with the prominent entrance, signage, shaft and tower), ziggurat shapes, abstract lines, stucco geometries, grilles and of course, significant enhancers or nuancers. The furthestmost buildings display unarticulated rectangular facades, with

some horizontal projections. Only one out the 61 buildings (Normandie) did not have balconies. Only four display a lack of symmetry.

We conclude that apartment buildings display the greatest ‘family resemblance’ over the course of the period under study. We can map an evolution of the facade most clearly in these buildings as they move from an Ornamental Art Deco to a Streamlined Modernist Art Deco and finally to Modernist (largely unarticulated) facades. Our mapping leads us to conclude the presence of isotopy (enhancers and nuancers) in the case of apartment buildings closest to the exemplar, but the strength of the presence of formants and discontinuities as the most identifiable basic objects that make Art Deco apartment buildings in Bombay identifiable and memorable. We conclude that this evolutionary gradation makes Art Deco in Bombay a proto-modern movement. Buildings that came up in the 50s and 60s after the time frame under study followed this stripped down template, until the paradigm of ‘postmodernism’ in the late 1980s brought a different type of isotopy back on the facades.

As demonstrated here, the tools we have used for mapping can also be used to map buildings from other time periods to identify exemplars and chart evolutionary trends.

8.10 Re-contextualization

8.10.1 Re-contextualization- Modernism and Art Deco architecture in Bombay

Art Deco architecture in Bombay has always been burdened by its position in the historical development of Indian architecture in the 20th century. It has in the literature of the period never been properly recognised as a pan Indian phenomenon, nor has its immense popularity on the 1930s and 40s been properly appreciated. Art Deco on Bombay/India has always carried the baggage of being ‘backward looking’ and displaying a ‘continuing satisfaction and contentment with a tried and tested vocabulary’ (Chatterjee, 1985, p. 126). This label is seen in the context of the development of Modernist architectures in the country, valorised particularly post independence. The architecture of the 1930s and 40s then gets subsumed into the larger set of colonial architecture, which is profoundly misleading. As mentioned earlier the imperial buildings of the period had already seen their swansong by the beginning of the 1930s, and the

completion of New Delhi. What was emerging was the expression of Indian architects setting up their own practices, especially in Bombay.

We shall therefore now re-contextualise Bombay's Art Deco architecture with the tenets of Modernism.

Modern architecture emerged in the first quarter of the 20th century, particularly in the wake of the First World War in Europe. Internationally, Modern Architecture is placed within four ideological characteristics- the first that it emerged rejecting historical references and revivalism (specifically the neo-classical and the Beaux Arts stylistics); the second, that it eschewed surface ornament and promoted functionality as its aesthetic; the third that it embraced the new material and technology of its time (especially steel, glass and reinforced cement concrete), and fourth that Modern architecture showed social commitment and concern (Tietz, 1999, pp. 6-10). How may we read Art Deco architecture in Bombay with regards to these characteristics?

Right from its initiation, when the designers of the western world came together to display their designs at *Exposition Internationale des Arts Décoratifs et Industriels Modernes* (International Exhibition of Modern Decorative and Industrial Arts) which ran in Paris in the second half of 1925, the very brief of the exhibition stated that no designs evoking revivalist or historical references were permitted. The designs had to be, of necessity, modern. The designers therefore had to come up with a new visions, and new sources of reference. The exhibitions success meant that the new aesthetic that rejected history and sought the shock of the new became mainstream, and would result in the production of a large number of objects across scales, from font design to architecture. As mentioned before it is this exhibition from which the name Art Deco was derived.

When Art Deco is adopted (and adapted) by Indian architects in Bombay in the 1930s, we see the selfsame desire not to denote or connote historical references but to choose original forms, shapes and isotopies, and references that were contemporary and/or international. This, despite the fact that the only school of architecture in Bombay (the Sir JJ School of Art) included the study and adaptation of history and stylistics as an essential part of their curriculum (Dalvi,

2016). The architects with the biggest practices at the time were also the teachers and instructors at the Sir JJ School of Art, including Claude Batley (of Gregson, Batley and King), C. M. Master (of Master, Sathe and Bhuta) and G. B. Mhatre among others. In their practices, they pursued the architecture of the Style Moderne, or of streamlined modernism, all variations of the Art Deco⁵.

The novelty of the original in Art Deco architecture is taken forward in the nature of ornament on the facades of buildings. We have mentioned Enhancers that follow the massing and structural lines of the buildings and emphasize the buildings articulation. Unlike Neoclassical facades that act as overlaid ornamentation that in a sense decorates an unarticulated box, enhancers on Art Deco buildings work in tandem with the structural and functional shapes of the buildings. Lines that follow the verticals and enhance the horizontals are called speed lines, and they connote the modern age of electricity and transportation. Porthole windows connote ocean liners, and so on. Stucco geometries are seen on the buildings where the walls meet the sky or the balconies curve out from the building surface. In the case of Bombay's buildings this is significant as they are adapted to local climatic imperatives. Facades are articulated to provide shade and protect against the rain. This is seen in the form of cantilevered balconies, and protective eyebrows, that are locally called chajjas.

As can be seen in the Table below, it is these very elements that our findings showed as preponderant and identifiable on a majority of buildings closest to the exemplar (flat roofs, balconies, cantilevers, horizontal accents, horizontal projections, etc.) And it is on these elements that Enhancers feature. The Table shows the preponderance of Basic Objects as seen the apartment buildings. However this is equally true for Office buildings and Cinema Houses (see Appendix 4).

⁵ The education and curriculum of the Sir JJ School of Art in the education of architects and the practices in Bombay at the time are explored in the book 'The Past as Present: Pedagogical Practices in Architecture at the Bombay School of Art'. Based on an archival exhibition at the Sir JJ College of Architecture in the first half of 2016, this book displays extensively the pedagogical output and the references that drove the learning processes at that time, including the stress on documentation of historically important buildings, learning by copying historical styles, and creating contemporary designs that were done in revivalist styles of the past from both Western (Neoclassical, Neogothic, etc) and Indian (Dravidian, Aryan, Mughal, Sultanate, etc) traditions. In addition, students were also assigned projects to design in with contemporary materials, abstractions and aesthetics. Most of the architects in Bombay in the 1930s and 40s graduated from the school and set up practice in the city. The buildings in our inventory from Bombay are almost all designed by these architects.

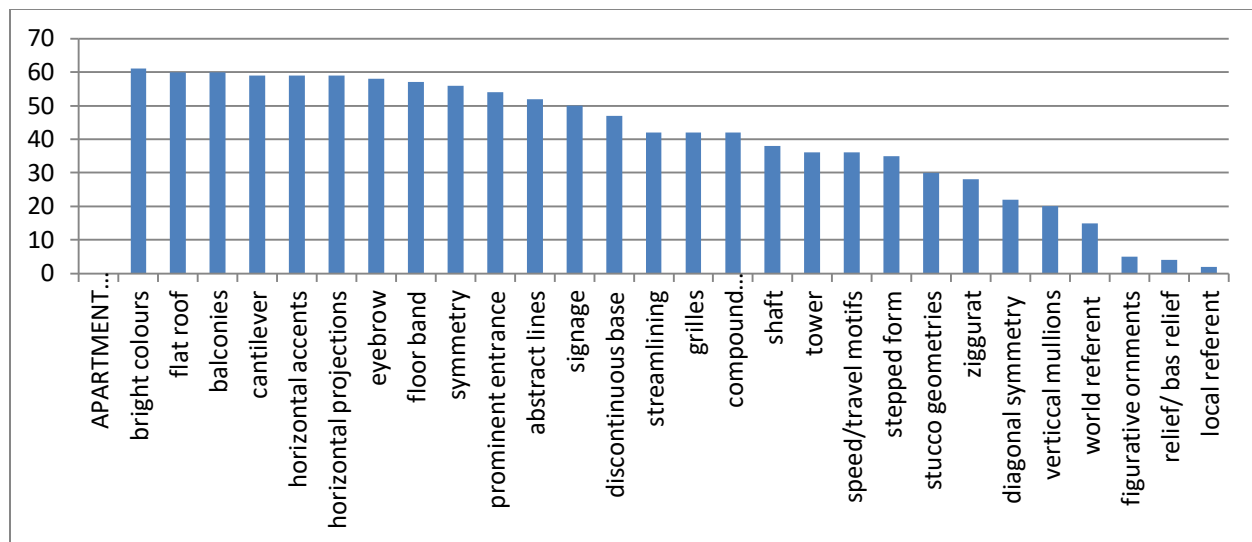


Table 8.1 Apartment buildings. Preponderance of Basic Objects

When it comes to Nuancers, or figural ornament we find it present in the buildings closest to the exemplar in all three cases. Ornament on the facades of Bombay's buildings are not central to their identification and Art Deco-ness may be observed even on such facades that have no Nuancers at all. Where Nuancers are present they we see that their design does not fall back on referencing Neoclassical or ancient Indian sources. Nuancers on Bombay's Art Deco facades are seen in three different configurations-

1. As referents of sea, surf and speed- in the form of waves, frozen fountains, bolts of lightning. The tropics are denoted with palm fronds and trees.
2. Hollywood- referents to showbiz, are denoted exclusively on certain cinema houses. For example, we observe theatre masques depicting laughter and sadness for example can be seen on the façade of the Regal in Bombay. A piano keyboard forms the vertical shaft on the Liberty in Bombay.
3. Local referents in the form of human labour and endeavour are both denoted and connoted on the facades of office buildings, specifically the insurance buildings. These are mainly seen as bas-relief murals of stylised human figures representing various trades in Bombay, like street vendors or labourers. The New India Assurance Building in Bombay has the best representations of these Nuancers in the form of figural murals.

When these are collectively seen in the context of Modernism, there is no ideological need to proscribe surface ornament in Art Deco buildings in Bombay. Quite the reverse, isotopy is one of

the defining features, although not central. In this regards, Art Deco architecture does deviate from the tenets of Modernism stated earlier, but does not carry any sort of Revivalism forward.

The use of modern materials and structural systems is central to Art Deco architecture in Bombay. The rise of the apartment block that starts to predominate housing in the city from the 1920s is syntagmatic with the use of the RCC frame made from cement and steel. The frame structure, is of course a paradigm shift from the load bearing structure that was the standard system for centuries previous. Steel technology in building is a late 19th century invention while RCC technology is from the early 20th century.

The adoption of these contemporary materials gives Art Deco buildings its distinctive look and is the commonest of the Basic Objects found on all the buildings. Flat roofs, balconies, cantilevers and streamlining are all functions of RCC construction and the formants resultants of their use. The cement companies advertising its use popularised this all over the country, as is mentioned in the next section.

Comparing the Basic Objects identification with the Perceptual Survey we conclude that the semiotic space created by the architecture that came up almost eighty years before the present time has remained- its denotata and connotata are still embedded in the perceptions of the citizens of Bombay, who can identify them without much deviation and misunderstanding.

We conclude that the social concerns of Art Deco buildings in Bombay were expressed not specifically through the intentions of their designers (although group living in apartments and communal recreation in the form of cinema houses may be considered socially relevant) but through the readability of their facades, where their commonalities and self similarity gives a language to the fabric of the city. This socialization of signs, as the Basic Objects that can still be activated in the minds and sensibilities of respondents born generations after but who still occupy the same space as those that did when the buildings were first built is proof of the semiotic persistence of Art Deco as a visual language still comprehensible to its citizens.

Put back into its historical context, we conclude that Art Deco architecture in Bombay arrives full blown in the mid 1930s (based on buildings most proximal with their respective exemplars, where the buildings closest to the exemplar are some of the earliest built). There is no evidence of evolution from an earlier style into Art Deco. In other parts of Europe and the United States, Art Deco evolved from its predecessors, the Art Nouveau⁶ gradually, as the former's swirling natural forms settled into flattened relief ornament to integrated with modern systems of construction into the Art Deco. In Bombay, there is no evidence of building facades displaying Art Nouveau features. On the other hand, when in decline, Art Deco in Bombay has a long tail and gradually withers to a vestige by the early 1950s, before it is subsumed into Modernism.

Re-contextualising chronologically, we can read these buildings as proto-Modernist, where formal denotations are foregrounded (despite the building materials and structures that would be shared with High-Modernism, which would come later). As Modernist architecture slowly gained center-stage in the late forties and early fifties, the denotative/connotative semiotic would soon get subsumed in the 'form follows function' adage, which would lead to buildings largely undifferentiated based on their facades, and materials and structural functions valorised above all else. Modernist buildings would also eschew ornament ('Ornament is Crime' - Adolf Loos⁷) and historical reference, both characteristic of the isotopies on Art Deco buildings.

8.10.2 Re-contextualization- Indian architecture for the Indian citizen

Indian architects were setting up architectural practice in Bombay for local users- local architects for private commissions, outside of the Imperial gaze gain momentum by the end of the 1930s, aided by two important drivers- the first being the opening out of the northern areas as plotted development for middle class housing, and the reclamations that created plotted developments on

⁶ Art Nouveau was a decorative style that emerged in the last decade of the 19th century and gained prominence in the first decade of the 20th. It was seen applied to architecture, furniture and all forms of product and graphic design. Art Nouveau is seen as a reaction to late 19th century revivalism and 'the Battle of Styles' prevalent in different parts of Europe, and emerges simultaneously in Austria, Spain, Germany, and Hungary. Art Nouveau was inspired by and valorized the 'curving line', as seen in natural forms like vines, flowers and plants. On architecture it is seen best as applied ornament and sculpture.

⁷ Adolf Loos, an Austrian architect, would in a lecture in 1910, and subsequently in an essay in *Cahiers d'aujourd'hui* (issue 5 of 1913) called 'Ornament und Verbrechen', or 'Ornament and Crime' deride the use of ornamentation in objects of all kinds by asserting that culture evolves when ornament from 'useful objects' is excised. His writings were very influential in the developing notions of Modernism in architecture.

the Backbay (On the Oval by 1929 and the Marine Drive by 1940) spurred the construction of apartment blocks in the city. The newly created business spine of the Pheroze Shah Mehta Road (1928) and the areas around Churchgate in the 1940s led to the construction of several Office buildings, while the popularity and patronage of the Hollywood studios would lead to the construction of several Cinema Houses in the city.

There were several architecture firms in Bombay in the 30s and 40s and their practice was prolific. They designed apartment blocks, office buildings, cinema houses, bungalows and other buildings of public utility in the city and beyond. Almost all the buildings showed characteristics of Art Deco to varying degrees and eclectic expression. Among these were the aforementioned Gregson Batley and King, Master Sathe and Bhuta, and G B Mhatre, but also Bhedwar and Bhedwar, Contractor and Kanga, Adalja and Noorani, Suvernapatki and Vora, Poonegar, Bilimoria and Company, Merwanji Bana and Company, B J Sanjana and Son, the Dhuradhar Brothers, Yahya C Merchant, Taraporewalla and Company, Abdulhusein M Thariani, K P Davar and Company, S M Kini, Patki Jadhav and Dadarkar, S H Parelkar, Jaykar Gupchup and Darukhanawala, Vaidya and Company, R N Thacker, Sykes Patkar and Divecha, Shapurji N Chandabhoj and Company, Koran and Bhatt, Patell and Barma, B E Doctor and several others (The Associated Cement Companies Limited, 1937).

The second driver was the enthusiastic projection of the use of cement, cement products, concrete and RCC by the Associated Cement Companies that would lead to Art Deco buildings being built in large numbers in Bombay and indeed the rest of the country (The Associated Cement Companies Limited, 1937) (The Cement Marketing Company of India Limited (Publicity Department), 1942?). These drivers are directions of research that certainly would benefit from more in depth study and analysis. Many of the buildings in our inventory are derived from these publications.

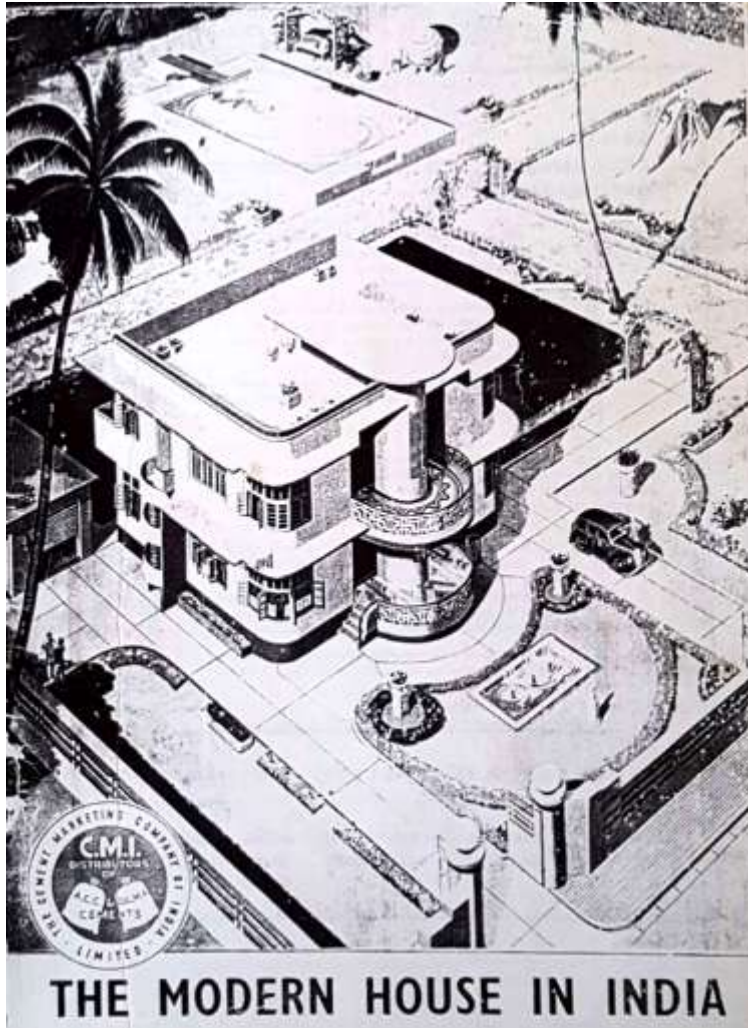


Figure 8.1 Cover of 'The Modern House in India', published by the Cement Marketing Company of India Ltd, an annual publication, 1942?

Bombay was by no means the only city where Art Deco architecture would be built. Just going through the cement company publications tell us of its spread and prevalence. In a single issue from 1937, we observe built examples of Art Deco architecture in Bombay, Poona, Baroda, Nasik, Ahmedabad, Karachi, Chota Udaipur, Chindwara, Lahore, Calcutta, Madras, Coimbatore, Bangalore, Aleppy and Mysore- (The Modern House in India, 1937). In the 1942? Issue, in addition to those mentioned earlier are buildings from Cawnpore, Aligarh, New Delhi, Assam, Kalimpong, Darjeeling, Patna, Hyderabad (Deccan and Sind), Indore, Rajpipla, Morvi, Udaipur, and Surat, effectively spread over the length and breadth of the country (The Modern House in India, 1942?).

It is therefore evident that even in the two decades before Indian independence, and as present subjects of the Empire, architects in Bombay (and outside it) were not British but Indian and educated in India. Their clients in turn were Indian citizens living in the Presidency towns and larger cities, or part of the Princely States. Architects built at every level of the scale, from mass housing projects to middle-class apartment blocks, to bungalows to palaces. We can observe elements of Art Deco architecture in many of their facades.

8.10.3 Re-contextualization- Contemporary Relevance

Mumbai is currently undergoing rapid, transformative changes. These have begun to impact the urbanscape of the metropolis in a manner that has not been seen earlier. The changes in infrastructure present themselves on the materiality of the city not only by creating new skylines and visual iconography, as in the additions of elevated train lines, flyovers and skywalks crisscrossing the erstwhile streetscapes, but also by the changes in the city's Development Plan, that allow for large scale brownfield redevelopment of buildings and sites.

Effectively this allows for many of the buildings that made up erstwhile Bombay to be brought down and replaced by contemporary structures that following current bye laws that make new buildings rise, setback from earlier building lines and up and beyond current skylines as high-rises. The buildings in immediate danger of redevelopment are the privately owned apartment or office buildings, effectively, buildings not demarcated for public use. These buildings are ready converted into the currency of their real estate should their owners or residents desire. Art Deco buildings in Mumbai are therefore high on the list for redevelopment.

Even as this research progressed, buildings that once populated our inventory have been lost to redevelopment. Gold Finch by G B Mhatre, a very significant Art Deco building from 1937 was an excellent example of formants and discontinuities in the courageous use of RCC cantilevers and balconies. This building could be seen as an important landmark in the oeuvre of this architect whose work straddled the period under study. This apartment building was also part of an urban-scape of self similar buildings lining both sides of R P Masani Road (also known as Hollywood Lane because of the number of Hindi film personalities who used to reside there in the 40s and 50s) in the Dadar Matunga Precinct.

In early 2016, Gold Finch was demolished, as was its immediate neighbor to be redeveloped as a high-rise. Not only is this a loss to the inventory of Art Deco buildings in the city but it completely transforms the scale of the street. We hope that our research into understanding Art Deco buildings as signs that communicate with the city can be used to prevent such demolitions by increasing awareness about the richness of this architectural typology.



Figure 8.2 Gold Finch, Dadar Matunga Precinct 1937

In many parts of the city, Art Deco buildings are not even listed for heritage conservation. Indeed Mumbai does not have a comprehensive list of buildings that could be categorized as Art Deco. This essential part of the city heritage could, in the immediate future, be lost forever. We hope that the tools presented in this research can be useful in the preservation of these buildings, and their facades. This is especially useful in the identification of buildings that have characteristics of the Art Deco that are not immediately apparent. We assert that tools such as these are essential in the identification and demarcation of Art Deco precincts (and individual buildings) that have not been identified as yet. There is a strong case for making Mohammed Ali Road and Pheroze

Shah Mehta Road into Art Deco precincts. The isolated bungalows in the erstwhile villages of Bandra and Chembur also need to be specified for preservation.

8.11 Addressing the gaps in the discourse on Bombay's Art Deco architecture

Can semiotic readings of the buildings of Art Deco of Bombay between 1930 and 1949 fill the gaps in the discourse of the development of Bombay's/India's architecture?

Our research to determine the traits that allow for semiotic identification of Art Deco-ness in the buildings of Bombay in the period 1930-1949 were motivated by certain gaps in the discourse of Art Deco architecture in the metropolis, and country at large. By this research, we believe that the following gaps in the literature and discourse have been addressed:

Since a lot of the discourse has centered on stylistics, foregrounding chronology and evolution of style, the virtual absence of synchronic readings had been addressed by our research and its conclusions. We have demonstrated that buildings can be read as Texts for semiotic signification, in an ahistoric manner to take the discourse on Art Deco architecture in Bombay forward.

The current narrative clubs together all Art Deco architecture, while highlighting certain 'canonical' examples that get taken forward from author to author. One such example is the Empress Court, an apartment building on the Oval Maidan which is always presented as a beacon of Art Deco expression in Bombay's architectural evolution. (Chatterjee, 1985) (Desai, Desai, & Lang, 2012) (Dwivedi & Mehrotra, 2008) All the authors have appreciated this building in its present form, without acknowledging that it has been substantially altered over time. While the formants of Empress Court are by and large the same, the discontinuities, especially the nucleus has completely transformed when the building was refurbished with an extra floor (as is the case with most Art Deco apartment buildings). We can, through a simple juxtaposition of the original and the changed façade determine whether the Empress Court forms a 'best example' in terms of its proximity to the exemplar.



Figure 8.3 Empress Court on the Oval (left in 1937, and right in 2016)

We have, on the other hand, through the mapping brought out several examples of buildings not so far considered worthy of representing Art Deco architecture in Bombay, such as the Gyani Manzil in the Dadar Matunga precinct. Our findings have also fore-grounded several cinema houses outside of Bombay (notably the Phul in Patiala, the Anna Malai in Madurai and the

Casino in Chennai) as worthy finding their place in the list of notable examples of Asian Art Deco architecture.

We have addressed the issue of clubbing together of Art Deco buildings, by demonstrating that the sub-categories of buildings based on typologies is a more useful way of studying the buildings as there are specific Basic Objects related to specific typologies. This demonstrated the sub-cultures of building and the fluency of narrative syntax (or text) available at the time by its practitioners and comprehensibility by its viewers and users. While we have restricted our mapping to three building types, the Cinema Houses, the Office Buildings and the Apartment Buildings, we assert that the same method can be applied to other typologies like bungalows and hotels, which were also prevalent during the period.

We have, through our analysis demonstrated that the one feature that dominates the discourse on Art Deco Architecture in Bombay, namely its surface ornament and decoration is not the central feature that determines the Art Deco-ness of the building but rather the stepped massing and organization along an axis of symmetry, along with architectural elements such as the balconies, cantilevers, streamlining and horizontal articulation that have greater weight when it comes to assessing any building as worthy of representing Art Deco in Bombay. This does tend to break a stereotype that has dominated the narrative so far, but we hope that more nuanced readings of the buildings and their facades will be possible because of this.

We have also, in re-contextualising our research back into the historical narrative demonstrated that the phase of Art Deco architecture in Bombay and in the rest of India was dominated by Indian architects and their prolific practices, while their clients were Indians as well. Art Deco in India although arriving from foreign shores does in a very short while become an indigenous production that was validated by its widespread acceptance amongst the subject population in the penultimate decades of imperial rule.

8.12 Contribution to the Field

Our research has contributed to, and extended the current discourse on Art Deco architecture in Bombay in several significant ways:

While other authors and experts have mentioned (in passing) that Art Deco architecture should be studied from a semiotic perspective, we have by doing so, front and center, provided a means by which such architecture can be read for signification. Our research has also opened out several possibilities in making synchronous, ahistorical readings of architecture that can yield further signification. This method of research and semiotic analysis has never before been applied to the appreciation of architectural facades as visual communicators.

By establishing exemplars, we have demonstrated that all buildings that fall into a certain typology can be assessed for proximity or distance. This creates a map of graded membership to the category. This allows for both the determination of what makes a buildings a ‘best example’ as well as the many that do not but still can be included on the basis of ‘family resemblances’. This has allowed us to make clearer definitions for buildings (through sub-categories) that fall under the category of Art Deco.

The methodology used to carry out this research, specifically the formation of an Exemplar, Basic Object Identification and Weighted Basic Object Mapping is a set of tools that can be used in other contexts for analyzing architectural categories for signification, without being burdened by the baggage of the past. This methodology, our contribution to the field of architecture, architectural history and semiotic analysis can easily adapt itself to studying styles, or typologies. As an extension of this we have also created the tools for intra-objectual basic object analysis, a method that has not employed as a form of architectural analysis so far.

We would be remiss, if we did not acknowledge that our research ‘stands on the shoulders of giants’, that we have extended the research already carried out in semiotics and the perceptual domain by such significant contributors as Ludwig Wittgenstein, Algirdas Greimas, Eleanor Rosch, Alvise Mattozi and Uday Athavankar. Any value that this thesis has to future researchers is a tribute to all these semioticians and perceptual domain researchers who made such important contributions in the field.

8.13 Future Work

Our research has set out a methodology for reading architecture as text. We have created a semiotic for the appreciation of Art Deco architecture in Bombay during the period 1930-1949. We believe that there is space for future researchers to look at the architecture of the late 19th century, specifically Indo-Saracenic architecture with semiotic readings, as it does currently suffer from the same form of ambiguous definitions that beset Art Deco, as we have already discussed.

In our specific domain of research, we believe that a deeper study into the influence of Cement Companies in promoting the Art Deco as a common man's architecture in Bombay and the rest of India would yield valuable insights into the same time period that we have looked at. This was also a period uniquely defined by the presence imperial overlords that did not have much influence on the architectural praxis of the native architects in Bombay, who were free to be influenced by architectural muses not predetermined by government diktat. We believe more work is possible on studying both the practices and the buildings of the period.

Also, there is a clear slant on Art Deco in Bombay, we feel at the expense of Art Deco in the rest of the country. In our research we have attempted in a small way to highlight the value of Art Deco architecture outside of Bombay. We believe that a research space exists, focusing on similar buildings in the rest of India that were as prolific in the period.

Glossary of Terms

Actantial Model- A semiotic model developed by A. J. Greimas to break an action down into six facets/components, or actants- the subject, an object, the receiver, the sender, the helper and the opponent. Based on Propp's theories Greimas' model can theoretically be used to analyse any real or thematized action, but particularly those depicted in literary texts or images.

Art Deco- A retrospective appellation, derived from the 1925 Exposition Internationale des Arts Decoratifs Industriels et Modernes held in Paris, which celebrated living in the modern world. During its time, the style known as Art Deco was referred to, amongst other names, as the 'Style Moderne'.

Basic Objects- A class of entities that are the most inclusive members of a category for which mental images of the category as a whole can be formed. Members of basic object categories possess many of the same features in common. They are manipulated in similar ways. They have similar shapes. They can be identified by the average shape of the other members of the category. They are the most inclusive. (Rosch, 1976)

Bundles of Features- In most objects, perceptual and functional features occur in unique 'bundles', giving them a certain amount of predictability (after Rosch). these bundles show clear correlations making classification relatively easy. The human mind may even consider non-identical objects as equivalent and include them in the same category (Athavankar, 1990).

Central Member- Most natural and intuitively developed categories do not necessarily have a defined boundary; but are often structured round a ‘good example’ which is treated as a central member (after Wittgenstein) and others as its non-central extensions around it (Athavankar, 1990). An object that can metonymously represent all the other members in that category (Rosch, 1999).

Connotata- the suggesting of a meaning by a word apart from the thing it explicitly names or describes; the signification of something (Merriam-Webster, online)

Core- The manifestation of a body/flesh/product related to transformations – actions, what a certain body does, hence, its narrative program (Mattozzi, 2007).

Denotata- Actually existing objects referred to by a word, sign, or linguistic expression (Merriam-Webster, online)

Diachronous- The linear processes of time, in this case, historical developments.

Diexes- The interpretation of the text based on the analysis of that context of the text, related to the Semiotic Square (Greimas)

Enhancers- A coined term, to articulate isotopy. 'Enhancers' are semes that synchronically work with architectural elements. (Dalvi, 2015)

Envelope- An interface/shell/skin/packaging between the core and other bodies that manages the relations between the inside and outside – i.e. it is related to how a certain body does what the core predisposes (Mattozzi, 2007).

Exemplars- Judged ‘best’ examples of conceptual categories. These are rich, imagistic, sensory, full-bodied mental events that serve as reference points in all research effects. Also known as ‘prototypes’ (Rosch, 1999).

Formant- An entity derived from the plastic configuration of an object that outlines it as a singularity and, consequently, as an actant. A formant (or a sub-formant) highlights the internal relations, among parts, that constitute the object (Mattozzi, 2007).

Graded Membership- Graded membership is based on a 'shared features' notion of categorization, that results in the agglomeration of objects with the most frequently associated features of the central member around the central member, and other objects would trail off to an indistinct boundary as they display less and less features from the 'bundle' associated with it (Athavankar, 1990).

Heroic- A property of the formant that valorizes itself and its core

Inherencies- part of the essential character of an object

Inter-objectual Relations- Relations established by an object with other 'like' objects in the world (Mattozzi, 2007).

Intra-objectual Relations- Relations established within an object in terms of description and signification (Mattozzi, 2007).

Isotopy- A semiotic model developed by Greimas. In a text or a narrative, an isotopy is a repetition of a basic meaning trait, or seme that establishes some level of familiarity within the story and allows for a uniform reading/interpretation of it. Isotopy, according to Greimas (1966) are "a redundant set of semantic categories which make possible the uniform reading of the story" (Hebert, 2009).

Nuancers- A coined term, to articulate isotopy. 'Nuancers' are diachronous, often iconic ornament-semes on a building. Semiotic isotopies formed by Enhancers (see earlier) and Nuancers can be analysed for connotative meaning to chart a narrative of the architecture. (Dalvi, 2015)

Nucleus- The central formant that foregrounds the core around which the internal relations, among parts, that constitute the object are articulated. In the context of the paper, the nucleus creates a configuration that assumes as centre the vertical axis that is also the pivot for the general symmetry of the object (Mattozzi, 2007).

Object- A body, that is the intersecting point in a network of relations; that itself takes part in these relations and that other objects interact with it (Mattozzi, 2007).

Paradigm- A system constituted by all objects that can replace the object within the network it presupposes (Mattozzi, 2007).

Paradigmatic- Of, or denoting, the relationship between a set of linguistic items that form mutually exclusive choices in particular syntactic roles (Oxford Dictionary, Online)

Plastic Configuration- In an object, its body and its figure, both of which act together to constitute the object. While the plastic manifests in shapes, colours and textures of the object, the figure has to do with the Object/building in the external world.

Process Discontinuities- Discontinuities emerging from the various plastic configurations on an object, made evident by the plastic contrasts between the vertical and the horizontal. Formants are characterised by vertical dynamics and horizontal slowdowns and stoppages. Process discontinuities are articulated in the sub-processes of the nucleus and the sub-formants, calling attention to itself (Mattozzi, 2007).

Quotidian- Daily, usual or customary; everyday; commonplace

Salience- that which is prominent or foregrounded in a sign or text

Semiotics- A general theory of signs and symbolism, usually divided into the branches of pragmatics, semantics, and syntactic.

Semiotic Square- Developed by the Greimas, a semiotic square is a tool for developing elementary structures of meaning by creating a visual representation of oppositional entities. By placing a text within the square, logical conjunctions and disjunctions relating key semantic features are mapped within a larger contextual framework.

Synchronous- Occurring at the same time; coinciding in time; contemporaneous; simultaneous.

Syntagm- A network presupposed by the object in order to carry out its narrative program (Mattozzi, 2007)

Syntagmatic- Of, or denoting, the relationship between two or more linguistic units used sequentially to make well-formed structures (Oxford Dictionary, Online)

Appendices

Appendix I

Inventory- Apartment Buildings with Dates of Completion

Inventory- Office Buildings with Dates of Completion

Inventory- Cinema Houses with Dates of Completion

Appendix II

Questionnaire for Research in Design

Appendix III

Representative data sheet produced using the tool and the inventories, in this case for Cinema Houses

Appendix IV

Cinema Houses- weighted/unweighted comparison

Cinema Houses-Preponderance of Basic Objects

Appendix V

Office Buildings- weighted/unweighted comparison

Office Buildings-Preponderance of Basic Objects

Appendix VI

Apartment Buildings- weighted/unweighted comparison

Apartment Buildings-Preponderance of Basic Objects

Appendix VII

Apartment Buildings, Oval- weighted/unweighted comparison

Appendix VIII

Apartment Buildings, Marine Drive- weighted/unweighted comparison

Appendix IX

Apartment Buildings, Dadar-Matunga- weighted/unweighted comparison

Appendix X

Apartment Buildings, other Bombay- weighted/unweighted comparison

Appendix I

Inventory- Apartment Buildings with Dates of Completion

1	OVAL	Rusi Court/Court View	1935
2	DADAR MATUNGA	Giani Manzil	1937
3	OTHER	Shinghi Bhavan	1937
4	OVAL	Fair Lawn	1935
5	OVAL	Shiv Shanti Bhuvan	1936
6	OVAL	Palm Court	1936
7	OTHER	83 Mohamed Ali Road	1937
8	OVAL	Swastik Court	1935
9	OVAL	Rajjab Mahal	1936
10	MARINE DRIVE	Sunder Mahal	1940s
11	DADAR MATUNGA	Abhyankar/ Ganesh Niwas	1937
12	OTHER	Lentinage	1937
13	OVAL	Empress Court	1936
14	OVAL	Belvedere Court	1936
15	OVAL	Ivory	1936
16	OVAL	Sunshine	1935
17	MARINE DRIVE	Chateau Marine	1940s
18	MARINE DRIVE	Framroze Court	1940s
19	MARINE DRIVE	Riviera	1940s
20	MARINE DRIVE	Soona Mahal	1939
21	DADAR MATUNGA	Mahadev Bhuvan	1935
22	DADAR MATUNGA	Mohan Manohar	1937
23	DADAR MATUNGA	Rao House	1936
24	OTHER	Residence Altamont Road	1937
25	OTHER	Ram Mahal	1939
26	OVAL	Green Fields	1936
27	OVAL	Windsor House	1936
28	MARINE DRIVE	Krishna Mahal	1940s
29	DADAR MATUNGA	Bhoj Mahal	1937

30	DADAR MATUNGA	Ganesh Baug	1938
31	OTHER	Norman Haven	1937
32	OVAL	Queens Court	1937
33	OVAL	Oval View	1936
34	MARINE DRIVE	Oceania	1940s
35	MARINE DRIVE	Sea Green	1940s
36	OTHER	Cambridge Court	1937
37	OVAL	Moonlight	1935
38	OTHER	Moolji Manzil	1937
39	OTHER	Ahmed Mansion	1937
40	OTHER	Dreamland	1937
41	OVAL	Sorab Mansion/Rajesh Mansion	1937
42	DADAR MATUNGA	Hill View	1937
43	DADAR MATUNGA	Plot 579 Dadar Matunga Estate	1938
44	OTHER	Malabar Court	1941
45	OTHER	Sanghi House	1940
46	OVAL	Motabhoy Mansion	1935
47	MARINE DRIVE	Shanti Kuteer	1940s
48	DADAR MATUNGA	Rigvedi Bramhan Niwas	1937
49	OTHER	Marble Arch	1941
50	OTHER	Krishnabad	1941
51	MARINE DRIVE	Keval Mahal	1940s
52	DADAR MATUNGA	Khorshed House	1937
53	OTHER	Breach Candy House	1937
54	OTHER	Habib Court	1937
55	OTHER	Habib Flats	1937
56	MARINE DRIVE	Ganga Vihar	1940s
57	DADAR MATUNGA	Raoji Sojpal Building	1937
58	MARINE DRIVE	Shreyas	1940s
59	OTHER	Dil Pazir	NA
60	OTHER	Normandie	1930s

Inventory- Office Buildings with Dates of Completion

1	Bombay	Laxmi Building	1938
2	Bombay	Hornby View	1930s
3	Bombay	Citibank (Bombay Mutual)	1935
4	Bombay	Indian Merchants Chamber	1940
5	Bombay	Industrial Assurance Building	1940
6	Bombay	Ismailia Bank Building	1937
7	Bombay	New India Assurance	1936
8	Bombay	Oriental Bank	1930s
9	Chennai	Oriental Building	1935
10	Bombay	Currimji House	NA
11	Chennai	Mysore Bank Building	1957
12	Bombay	Sreepant Bhavan	1937
13	Bombay	HSBC	1950
14	Chennai	12 Thambu Chetty Street	NA
15	Chennai	Parry's	1938
16	Chennai	Bombay Mutual Life Assurance	1953
17	Bombay	Dhanraj Mahal	1937
18	Panjim	The Mandovi	1951
19	Chennai	United India Building	1940
20	Bombay	Express Building	1950s
21	Bombay	Jeevan Prakash	1950s
22	Bombay	Maneckji Wadia Building	NA
23	Bombay	The Ritz	1936
24	Bombay	Kent House	1935
25	Bombay	Bank of India	1938

Inventory- Cinema Houses with Dates of Completion

1	Bombay	Eros	1938
2	Bombay	Liberty	1949
3	Patiala	Phul	1930s
4	Madurai	Anna Malai	1940s
5	Bombay	Regal	1933
6	Bombay	New Empire	1937
7	Bombay	Metro	1938
8	Chennai	Casino	1941
9	Bombay	Diana	1940s
10	Delhi	Delite	1955
11	Delhi	West End	1950s
12	Bombay	Aroua	1940
13	Jaipur	Raj Mandir	1976
14	Bombay	Maratha Mandir	1958
15	Delhi	Filmistan	1970s
16	Bombay	Minerva	1971
17	Delhi	Regal	1932
18	Delhi	Sheila	1961
19	Calcutta	Elphinstone Picture Palace	1907
20	Bombay	Edward	1926

Appendix II

Questionnaire for Research in Design

Hi, I am a doctoral research student at the Industrial Design Centre, IIT- Bombay. This questionnaire is set for the purpose of research in visual communication and architecture. There is no commercial purpose attached.

There are 4 questions in this questionnaire. You will need 15 minutes to complete this task.

You are requested to share your knowledge and experience.

Please Note: Do not skip the questions marked with *.

Thank you very much for your help.

If you want to know more about my research, please feel free to contact me at mustansirdalvi@gmail.com

If you wish to share any information on this topic, do write to me. I welcome all suggestions. Thank you.

Researcher's Information:

Mustansir Dalvi
PhD Student, Industrial Design Centre
IIT Bombay
Mumbai 400 076
e-mail: mustansirdalvi@gmail.com

Participant's Information

Thank you very much for participating in this study. Please fill up this participant form (12 questions). The information provided here will not be disclosed to any public or commercial domain. It will be used only for academic purposes.

Please write your name
(optional)

Please write your e-mail ID
(optional)

Sex*

- ☐ Female
- ☐ Male
- ☐ Other

Nationality*

City of Residence*

Age Group*

- ☐ Less than 25 years
- ☐ 26 to 35 years
- ☐ 36 to 50 years
- ☐ 51 and above

Occupation*

Are you in a creative profession?*

(either a student or professional of design, art, architecture, etc.)

- ☐ Yes
- ☐ No

What is your specialization?*

(eg., architecture, interior design, urban design, history, sociology, etc.)

How much design experience do you have?*

- ☐ Bachelor Student
- ☐ Fresh Graduate
- ☐ Master Student
- ☐ PhD
- ☐ 2-5 years experience
- ☐ 5-10 years experience
- ☐ More than 10 years
- ☐ More than 25 years

What is your educational background?*

Please mention your graduation degree

- ☐ Degree/Diploma in Commercial Arts/Fine Arts
- ☐ Engineering
- ☐ Architecture
- ☐ Bachelors in Design
- ☐ Commerce/Arts graduate
- ☐ Science Graduate
- ☐ None of the above

Defining Characteristics of Art Deco Architecture

This study is related to defining visual characteristics of Architectural Facades in the Art Deco Cinema Houses, Office Buildings and Apartment Buildings).

Are you aware of the concept of Art Deco Architecture?*

(Recognizing Art Deco buildings, its visual characteristics)

- ☐ **YES**, I can recognize Art Deco buildings and their visual characteristics
- ☐ **NO**, I do not know about Art Deco buildings and wish to exit this questionnaire

If your answer to the previous question is **NO** then you need not attempt any further questions. Thank you very much for your time.

In the following pages, you will find 4 questions distributed over 10 pages. Please help us by answering these questions.

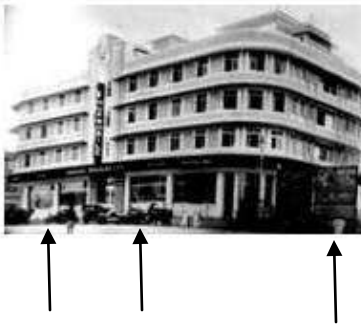
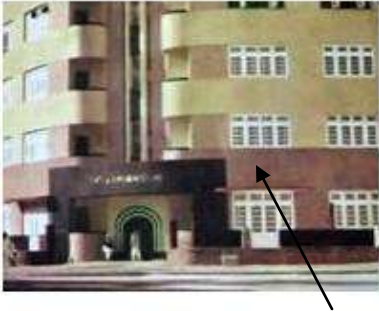
Q1.

Please turn to the next three pages (pages 5, 6, 7) and closely observe the architectural elements displayed.

Out of the 25 elements below, select the top 5 you associate best with Art Deco architecture. Please give your order of preference from **1 to 5** in the boxes below (with 1 being the best).*

No.	Element	Preference (1 to 3)
1	Flat Roof	
2	Cantilever	
3	Eyebrows	
4	Stepped Form	
5	Bright Colors	
6	Balconies	
7	Streamlining	
8	Monumental	
9	Tower	
10	Symmetry	
11	Diagonal Symmetry	
12	Shaft	
13	Vertical Accents	
14	Vertical Fenestration	
15	Vertical Mullions	
16	Horizontal Accents	
17	Horizontal Projections	
18	Floor Bands	
19	Prominent Entrance	
20	Street Opening	
21	Mixed Use	
22	Discontinuous Base	
23	Marquee	
24	Signage	
25	Ziggurat	
26	Abstract Lines	
27	Stucco Geometries	
28	Grilles	
29	Compound Walls/ Gates	
30	Relief/ Bas Relief	
31	Figurative Ornament	
32	Speed/ Travel Motifs	
33	Local Referents	
34	Hollywood Referents	
35	World Referents	

		
1 Flat Roof	2 Cantilever	3 Eyebrows
		
4 Stepped Form	5 Bright Colors	6 Balconies
		
7 Streamlining	8 Monumental	9 Tower
		
10 Symmetry	11 Diagonal Symmetry	12 Shaft

		
13 Vertical Accents	14 Vertical Fenestration	15 Vertical Mullions
		
16 Horizontal Accents	17 Horizontal Projections	18 Floor Bands
		
19 Entrance	20 Street Opening	21 Mixed Use
		
22 Discontinuous Base	23 Marquee	24 Signage

		
25 Ziggurat	26 Abstract Lines	27 Stucco Geometries
		
28 Grilles	29 Compound Walls/ Gates	30 Relief/ Bas-Relief
		
31 Figurative Ornament		32 Speed/ Travel
		
33 Local Referents	34 Hollywood Referents	35 World Referents

Q2.

Please turn to the next page (p.9) and closely observe the buildings displayed.

In front of the numbers below, please indicate, in your opinion, which of the following buildings is the best example of an Art Deco Cinema House. Please give your order of preference from **1 to 3** (with 1 being the best).*

No.	Preference (1 to 3)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

		
1	2	3
		
4	5	6
		
7	8	9
		
	10	
	CINEMA HOUSES	

Q3.

Please turn to the next page (p.11) and closely observe the buildings displayed.

In front of the numbers below, please indicate, in your opinion, which of the following buildings is the best example of an Art Deco Office Building. Please give your order of preference from **1 to 3** (with 1 being the best).*

No.	Preference (1 to 3)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

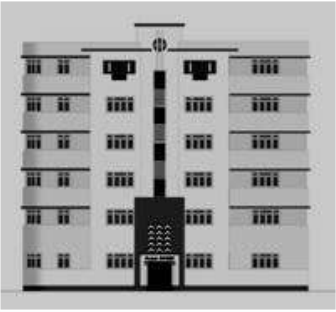
		
1	2	3
		
4	5	6
		
7	8	9
		
	10	
	OFFICE BUILDINGS	

Q4.

Please turn to the next page (p.13) and closely observe the buildings displayed.

In front of the numbers below, please indicate, in your opinion, which of the following buildings is the best example of an Art Deco Apartment Building. Please give your order of preference from **1 to 3** (with 1 being the best).*

No.	Preference (1 to 3)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

		
1	2	3
		
4	5	6
		
7	8	9
		
	10	
	APARTMENT BUILDINGS	

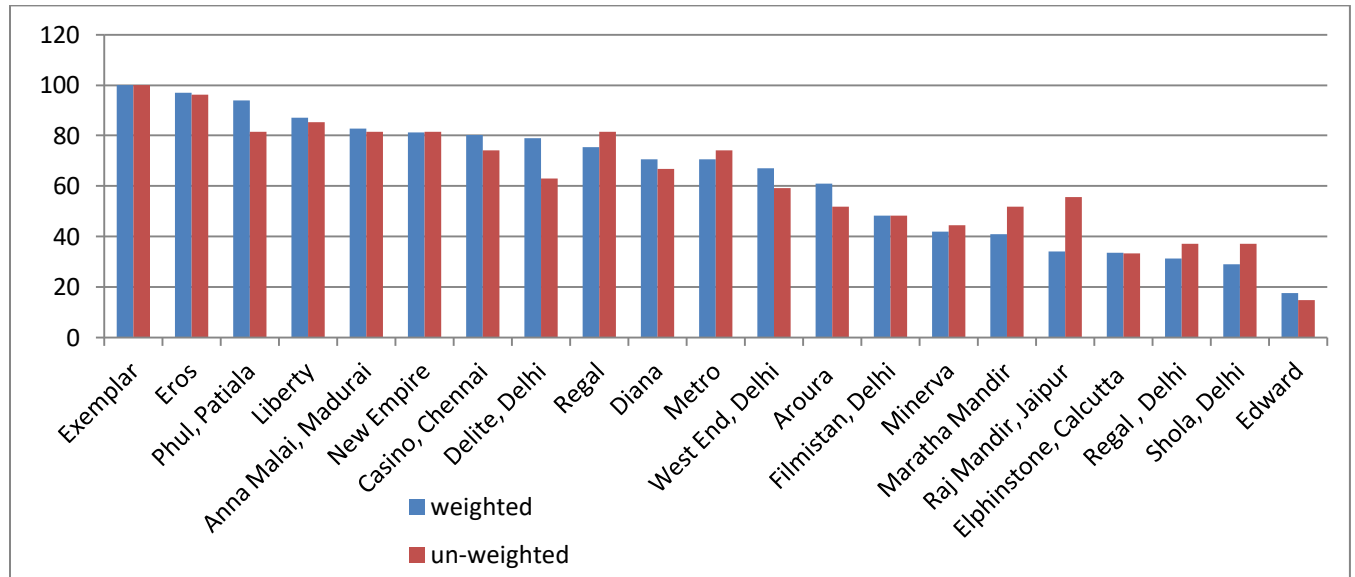
Representative data sheet produced using the tool and the inventories, in this case for Cinema Houses

Identification of Basic Objects (Data Sheet)

REPRODUCTION OF RELEASES										SUPERIMPOSITION															
AL CINEMA HOUSES		FUNCTIONAL		MARKETING		DISCONTINUIT		VERTICALE		HORIZONTAL															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC		EUPHONIC	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
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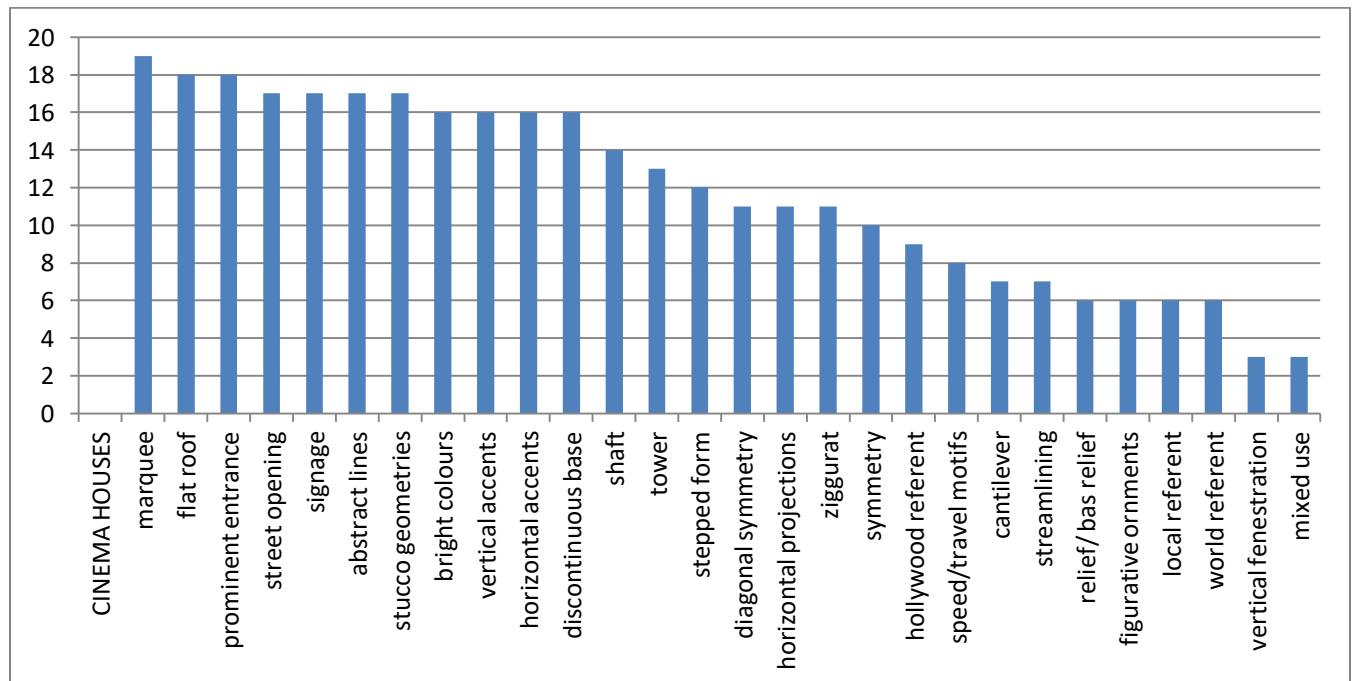
Appendix IV

CINEMA HOUSES- WEIGHTED/UNWEIGHTED COMPARISION



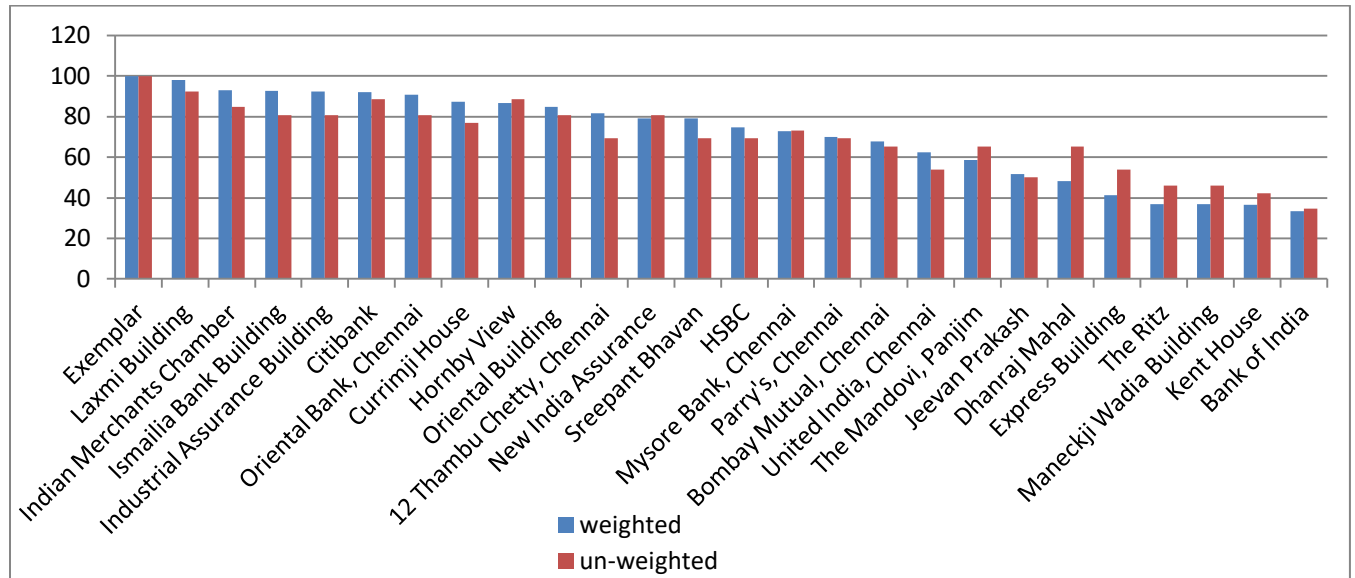
CINEMA HOUSES

PREPONDERANCE OF BASIC OBJECTS



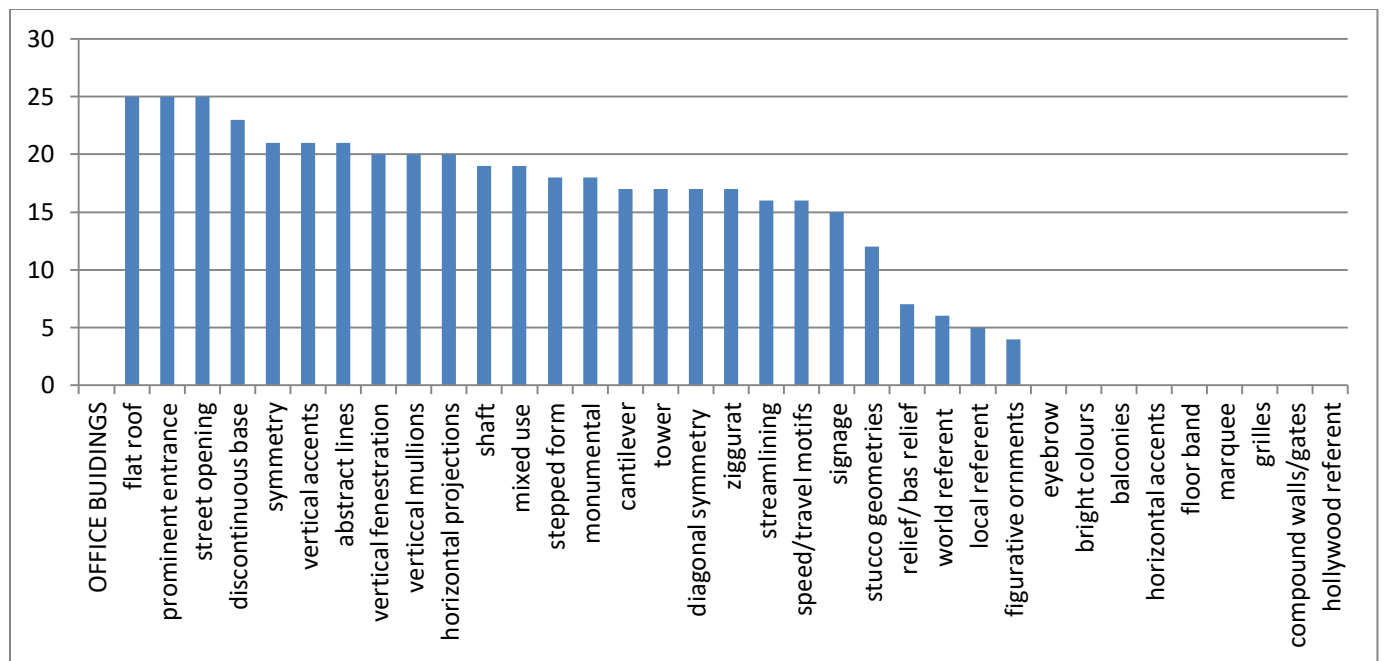
Appendix V

OFFICE BUILDINGS- WEIGHTED/UNWEIGHTED COMPARISION



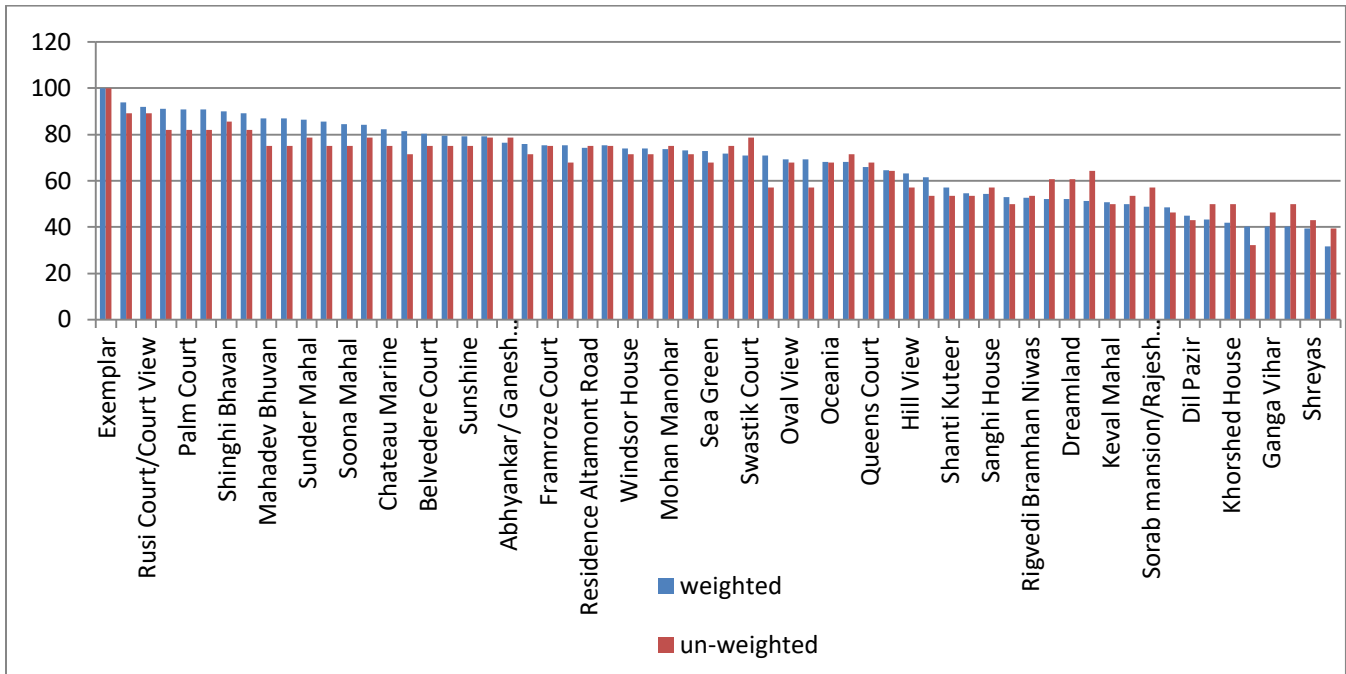
OFFICE BUILDINGS

PREPONDERANCE OF BASIC OBJECTS



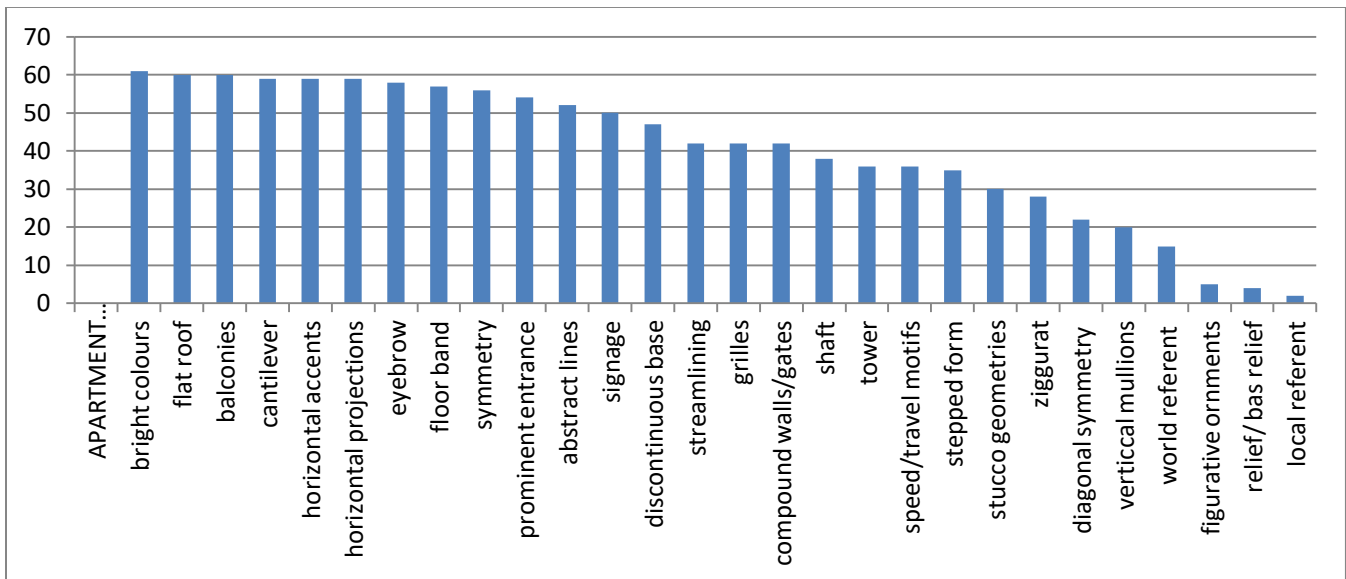
Appendix VI

APARTMENT BUILDINGS - WEIGHTED/UNWEIGHTED COMPARISION



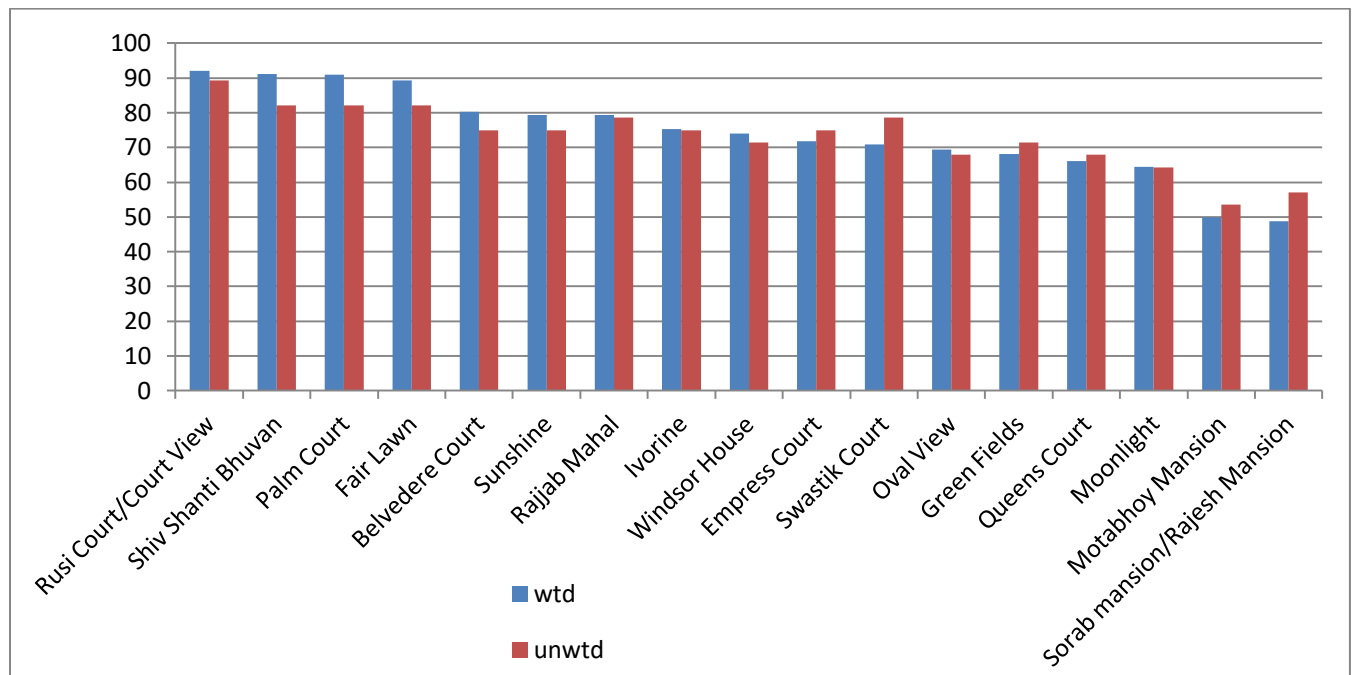
APARTMENT BUILDINGS

PREPONDERENCE OF BASIC OBJECTS



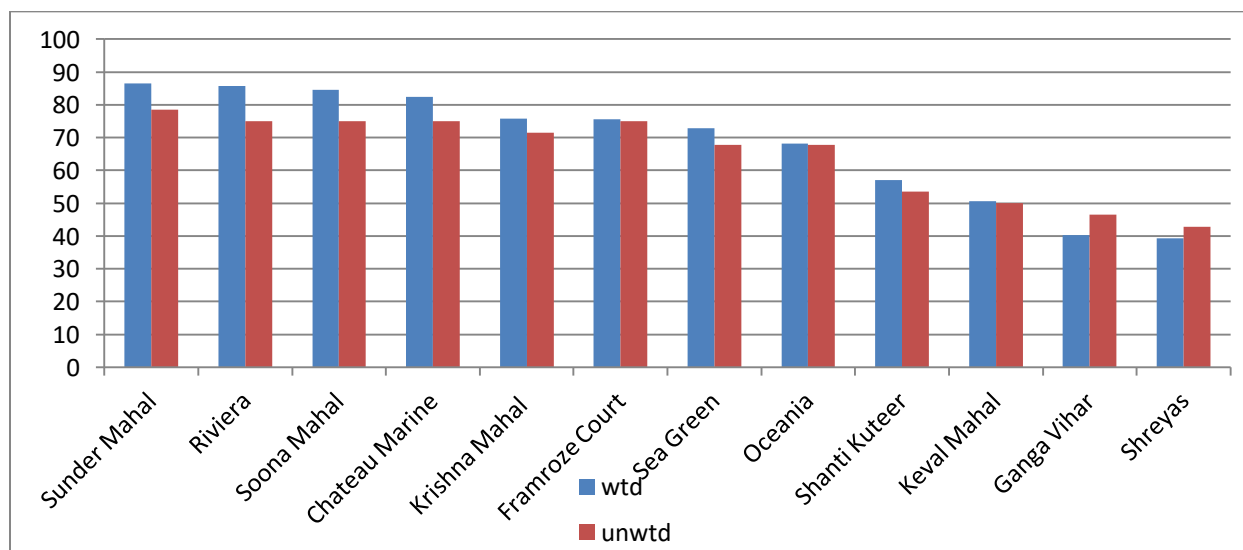
Appendix VII

APARTMENT BUILDINGS, OVAL - WEIGHTED/UNWEIGHTED COMPARISION



Appendix VIII

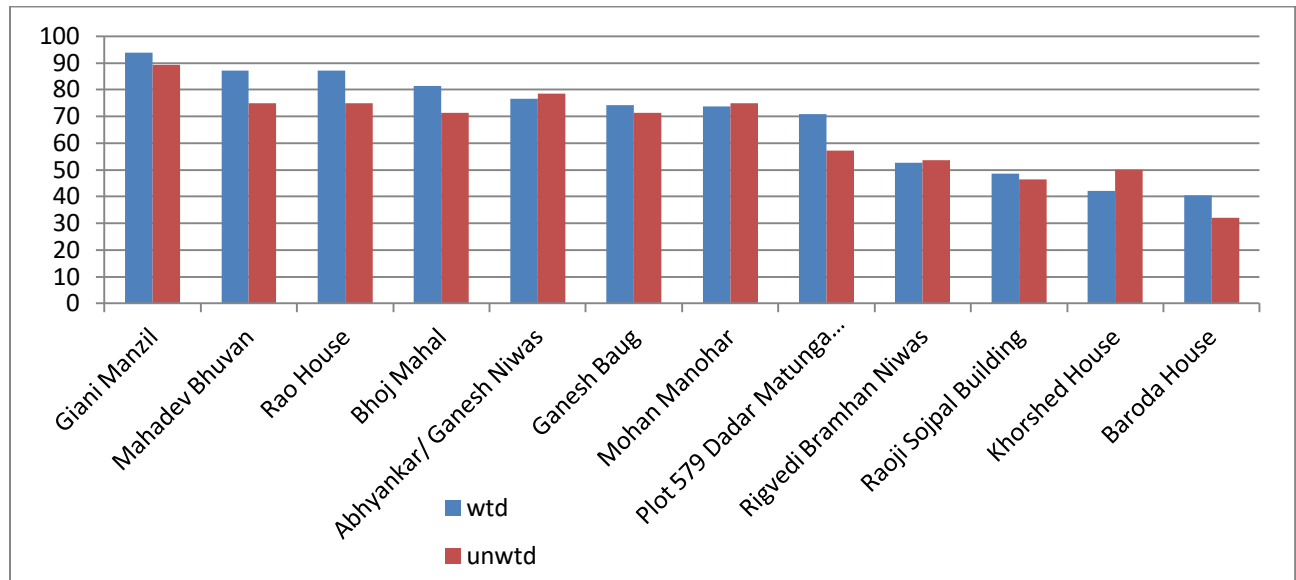
APARTMENT BUILDINGS, MARINE DRIVE- WEIGHTED/UNWEIGHTED COMPARISION



Appendix IX

APARTMENT BUILDINGS – DADAR-MATUNGA

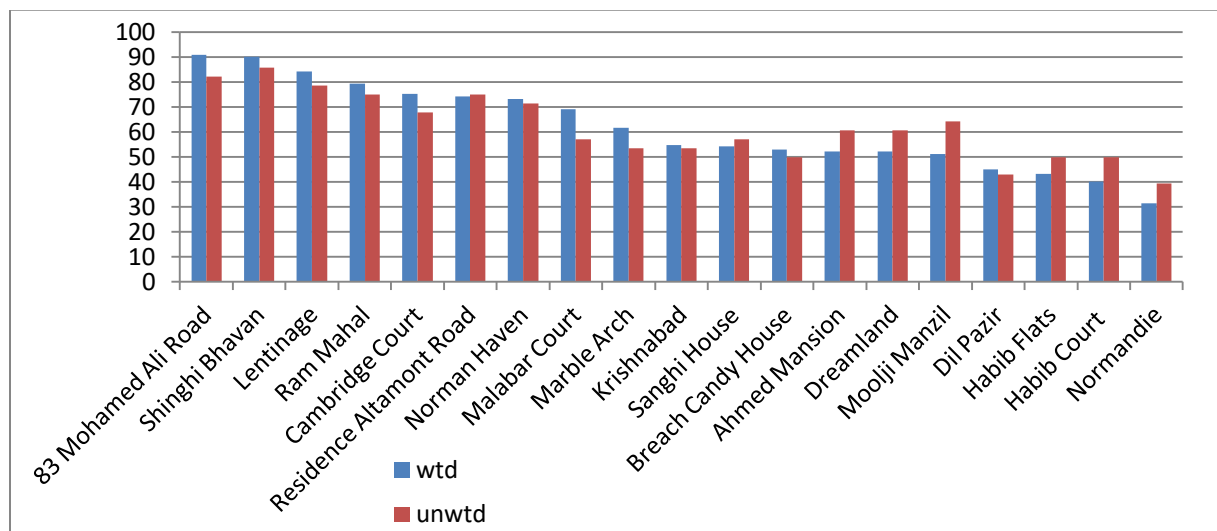
WEIGHTED/UNWEIGHTED COMPARISON



Appendix X

APARTMENT BUILDINGS – OTHER BOMBAY

WEIGHTED/UNWEIGHTED COMPARISON



Select Bibliography

Aga, B. S. (1931). Presidential Address. *Annual Address at the Indian Institute of Architects*. Bombay.

Alff, J. (1997). Temples of Light: Bombay's Art Deco Cinemas and the Birth of Modern Myth. In P. Rohatgi, P. Godrej, & R. Mehrotra (Eds.), *Bombay to Mumbai: Changing Perspectives* (pp. 250-257). Mumbai: Marg Publications.

Athavankar, U. A. (1990). The Semantic Profile of Products. In S. Vihima (Ed.), *Semantic Vision in Design* (pp. pp D1 - 31). Helsinki: University of Industrial Art, UIAH.

- Barthes, R. (2010). *Semiology and the Urban*. In N. Leach (Ed.), *Rethinking Architecture: A Reader in Cultural Theory*. London: Routledge.
- Batley, C. (1934). "Bombay Looks Ahead". *Journal of the Indian Institute of Architects* , I (1), 11-12.
- Batley, C. (1946). *Architecture* (Vol. Oxford Pamphlets on Indian Affairs No. 35). Madras: Oxford University Press.
- Batley, C. (1935). Modern Architecture in India. *Journal of the Indian Institute of Architects* , I (4), 118-119.
- Batley, C. (Ed.). (1937). Obituary for Robert William Cable F.R.I.B.A. *Journal of the Indian Institue of Architects* , IV (1), 1937.
- Batley, C. (1935). Presidential Address for the Session 1935-36. *Journal of the Indian Institute of Architects* , II (2), 47-49.
- Batley, C. (1935). This New Architecture. *Journal of the Indian Institute of Architects* , I (3), 103-104.
- Bayer, P. (1992). *Art Deco Architecture: Design, Decoration and Detail from the Twenties and Thirties*. London: Thames & Hudson.
- Bayer, P. (2003). *Art Deco Architecture: design, decoration and detail from the twenties and thirties*. London: Thames and Hudson.
- Benton, C., & Benton, T. (2003). The Style and the Age. In C. Benton, T. Benton, & G. Wood (Eds.), *Art Deco 1910-1939*. London: V&A Publishing.
- Benton, C., Benton, T., & Wood, G. (Eds.). (2010). *Art Deco 1910-1939*. London: V & A Publishing.
- Berger, A. A. (2004). *Semiotic Analysis*. Retrieved November 7, 2010, from http://www.uk.sagepub.com/upm-data/5171_Berger_Final_Pages_Chapter_1.pdf

Bhaskaran, L. (2007). *Designs of the Times: Using key Movements and Styles for Contemporary Design*. New Delhi: Impact.

Campbell, J. M. (Ed.). (1882). *Gazetteer of the Bombay Presidency (Thana District)* (Vols. XIII, Part 1). Bombay: Facismile Reproduction published by the Government of Maharashtra, 1984.

Chandler, D. (2005, April 4). *Semiotics for Beginners*. Retrieved November 8, 2010, from <http://www.aber.ac.uk/media/Documents/54B/semiotic.html>

Chandler, D. (2010, April 21). *Syntagmatic Analysis*. (Aberystwyth University) Retrieved November 9, 2010, from Semiotics for Beginners: <http://www.aber.ac.uk/media/Documents/S4B/sem04.html>

Chatterjee, M. (1985). The Evolution of Contemporary Indian Architecture. In J.-L. Veret, R. Rewal, & R. Sharma (Eds.), *Architecture in India*. Paris: Ministere des relations exterieures Association Francaise d'Action Artistique; Electa Moniteur.

City of Miami Beach, Department of Historical Preservation and Urban Design. (N D). *Art Deco Architecture in Miami Beach: A Workbook for Students*. Miami: City of Miami Beach, Department of Historical Preservation and Urban Design.

Cranfield, I. (2004). *Art Deco House Style: An Architectural and Interior Design Source Book*. Newton Abbot: Davis & Charles.

Crewinske, L. (1981). *Tropical Deco: The Architecture and Design of Old Miami Beach*. Rizzoli.

Crow, D. (2010). *Visible Signs: an Introduction to Semiotics in the Visual Arts*. Lausanne: AVA Academia.

Custard, H. (2013, January 24). *Art Deco*. Retrieved May 5, 2016, from Knowledge Base: <http://www.akimoo.com/2013/art-deco/>

Dalvi, M. (2000, June). 'Lesser Architecture in Bombay' in the 1930's & 1940's: Aesthetic Assertion in an Age of Chronological Eclecticism. Mumbai: A Dissertation submitted for the

Post Graduate Diploma in Indian Aesthetics; Department of Philosophy; University of Mumbai (Unpublished).

Dalvi, M. (2010). 'This New Architecture': Contemporary Voices in Bombay's Architectural Development in the 1930s. *'Architecture as Social History: Reflections on Bombay/Mumbai'*. Mumbai: The K. R. Cama Oriental Institute (Unpublished).

Dalvi, M. (2000). 'Domestic Deco' Architecture in Bombay: G. B.'s Milieu. In K. Iyer (Ed.), *Buildings that shaped Bombay: Works of G. B. Mhatre, FRIBA (1902-1973)* (pp. 14-21). Mumbai: KRVIA/UDRI.

Dalvi, M. (2015). Expressions of Modernity: Semiotic Isotopy on Bombay's Backbay Reclamation Buildings. (S. Dalvi, Ed.) *Tekton: A Journal of Architecture, Urban Design & Planning* , 2 (1), 56-73.

Dalvi, M. (2004). The 'Lesser' Architecture of Bombay. (A. Sardesai, Ed.) *Art India* , 9 (1), pp. 44-47.

Dalvi, M. (2016). *The Past as Present: Pedagogical Practices in Architecture at the Bombay School of Art*. Mumbai: Sir JJ College of Architecture & The Urban Design Research Institute.

Desai, M., Desai, M., & Lang, J. (2012). *The Bungalow in Twentieth Century India: the Cultural Expression of changing ways of Life and Aspirations in the Domestic Architecture of Colonial and Post-Colonial Society*. Surrey: Ashgate Publishing Limited.

Deshpande, R. S. (1935). *Cheap & Healthy homes for the Middle Classes of India*. Poona: United Book Corporation.

Deshpande, R. S. (1948). *Modern Ideal Homes for India* (4th ed.). Poona: United Book Corporation.

Ditchburn, D. W. (Ed.). (1936). Buildings on the Cooperage. *Journal of the Indian Institute of Architects* , III (2), 176.

Dossal, M. (2010). *Theatre of Conflict, City of Hope: Mumbai, 1600 to Present Times*. New Delhi: Oxford University Press.

- Durant, S. (1986). *Ornament: A survey of decorations since 1830*. London: Macdonal & Co. (Publishers) Ltd.
- Dwivedi, S., & Mehrotra, R. (2008). *Bombay Deco*. Mumbai: Eminence Designs.
- Dwivedi, S., & Mehrotra, R. (2002). *Bombay: The Cities Within*. Bombay: Eminence Designs Pvt. Ltd.
- Edwardes, S. M. (1909). *The Gazetteer of Bombay City and Island* (Vol. I). Bombay: The Times Press (Facsimile Reproduction, 1977, Printed at the Government Photozinc Press, Pune).
- Emmison, M., & Smith, P. (2004). *Researching the Visual: Images Objects, Contexts and Interactions in Social and Cultural Inquiry*. London: Sage Publications.
- Evanson, N. (2000). An Architectural Hybrid. In S. Patel, & A. Thorner (Eds.), *Bombay: Mosaic of Modern Culture* (pp. 165-181). New Delhi: Oxford University Press.
- Evanson, N. (1989). *The Indian Metropolis*. Yale University Press.
- Felluga, D. F. (2011, January 31). *Modules on Greimas: I- On Plotting*. Retrieved August 3, 2016, from Introductory Guide to Critical Theory:
<https://www.cla.purdue.edu/english/theory/narratology/modules/greimasplot.html>
- Felluga, D. (2011, January 31). *Modules on Greimas: On Plotting*. Retrieved February 10, 2012, from Introductory Guide to Critical Theory:
<http://www.cla.purdue.edu/english/theory/narratology/modules/greimasplot.htm>
- Finke, R. (1990). *Creative Imagery: Discoveries and inventions in visualization*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Gagliardi, M. (2006, May 1). *From Signifier to Signified: Art Deco versus Functionalism*. Retrieved February 11, 2012, from Mario Gagliardi: Design, Strategy & Cetera:
<http://ideas.mgstrategy.com/index.php?/archives/44-From-Signifier-to-Signified-Art-Deco-versus-Functionalism.html>
- Hebert, L. (2009). *Greimas: Introduction*. Retrieved November 5, 2010, from Signo: Theoretical Semiotics on the Web: http://www.signosemio.com/greimas/a_greimas.asp

- Hebert, L., & Everaert-Desmedt, N. (2011, July 5). *Tools for Text and Image Analysis: An Introduction to Applied Semiotics*. Retrieved October 21, 2011, from Signo: Theoretical Semiotics on the Web: www.signosemio.com
- Heller, S., & Fili, L. (2006). *Stylepedia: A Guide to Graphic Design Mannerisms, Quirks and Conciets*. San Francisco: Chronicle Books.
- Hillier, B. (1968). *Art Deco of the 20s and 30s*. London: Studio Vista.
- Hillier, B. (1998). *The Style of the Century*. London: The Herbert Press.
- Hillier, B., & Escritt, S. (1997). *Art Deco Style*. Phaidon Press.
- Iyer, K. (2008). Art Deco in Hindu and Parsi Colonies and Wadala. In S. Dwivedi, & R. Mehrotra, *Bombay Deco* (pp. 288-299). Mumbai: Eminence Designs.
- Iyer, K. (2014). *Boombay: from Precincts to Sprawl*. Mumbai: Popular Prakashan.
- Iyer, K. (Ed.). (2000). *Buildings that shaped Bombay: Works of G. B. Mhatre, FRIBA (1902-1973)*. Mumbai: KRVIA/UDRI.
- Jaffer, A. (2010). Indo Deco. In C. Benton, T. Benton, & G. Wood (Eds.), *Art Deco 1910-1939* (pp. 382-395). London: V & A Publising.
- Jaffer, A. (2010). Indo-Deco. In C. Benton, T. Benton, & G. Wood (Eds.), *Art Deco 1910-1939*. London: V & A Publishing.
- Jameson, F. (1972). *The Prison House of Language: A Critical Account of Structuralism and Russian Formalism*. Princeton: Princeton University Press.
- Kapadia, P. P. (1937). Presidential Address. (C. Batley, Ed.) *Journal of the Indian Institute of Architects* , IV (1), 257-260.
- Klein, D., MacClelland, N. A., & Haslam, M. (1987). *In the Deco Style*. London: Thames & Hudson.
- Krampen, M. (1989). Semiotics in Architecture and Industrial/ Product Design. *Design Issues* , 5 (2), 124-140.

- Kress, G., & van Leeuwen, T. (1996). *Reading Images: The Grammar of Visual Design*. London: Routledge.
- Krippendorf, K. (2006). *The Semantic Turn: A New Foundation for Design*. Boca Raton, London, New York: Taylor & Francis, CRC Press.
- Lakoff, G. (1990). *Women, Fire and Dangerous Things: What categories reveal about the mind*. Chicago: The University of Chicago Press.
- Lang, J. (2010). *A Concise History of Modern Architecture in India*. Ranikhet: Permanent Black.
- Lang, J., Desai, M., & Desai, M. (1997). *Architecture and Independence, the Search for Identity: India, 1880-1980*. New Delhi: Oxford University Press.
- Lenoir, T. (1994). Was that Last turn a Right Turn? The Semiotic turn and A. J. Greimas. *Configurations* , 2 (1), 119-136.
- Lotman, J. (1977). *The Structure of the Artistic Text*. Ann Arbor : UNiversity of Michigan.
- Mattozzi, A. (2007). A Model for the Semiotic Analysis of Objects. In S. Vihima (Ed.), *Design Semiotics in Use*. Helsinki.
- Mattozzi, A. (2009). A model for the Semiotic Analysis of Objects. In S. Vihma, & T. Karjalainen (Eds.), *Design Semiotics in Use*. Helsinki: Helsinki University of Art and Design Press.
- McNIGHT, F., & Kapadia, P. P. (1934). Review of Construction and Materials. *Journal of the Indian Institute of Architects* , I (2), 79-80.
- Mehta, H. (1936). Domestic Architecture in India. (P. P. Kapadia, Ed.) *Journal of the Indian Institutes of Architects* , II (4), 115-116.
- Miller, J. (2005). *Art Deco*. London: Dorling Kindersley Limited.
- Mistri, M. J., & Billimoria, H. J. (1942, January). Architectural Development in Bombay during the last Twenty-Five Years. *Journal of the Indian Institute of Architects* , 216-223.

- Moncrieff, A. (1929). *Handbook and Directory of the Concrete Industry in India*. Bombay: Concrete Association of India.
- Neumann, N. S. (1986). Semiotics of architectural ornament: a method for analysis. *Architecture and Comportement/Architecture and Behaviour* , 3 (1), 37-53.
- Osgood, C. E., Suci, G., & Tannenbaum, P. (1957). *The Measurement of Meaning*. Urbana, IL: University of Illinois Press.
- Parikh, A. (1997). The Architectures of Postmodernism. In T. Patel (Ed.), *Art Objects in a Postmodern Age*. Mumbai: The Mohile Parikh Center for the Visual Arts.
- Ramani, N. (2007). *Bombay Art Deco: A Visual Journey (1930-1953)*. New Delhi: Roli & Janssen.
- Rosch, E. (1978). Principles of Categorization. In E. Rosch, & B. B. Lloyd (Eds.), *Cognition and Categorization* (pp. 27-48). Hillsdale, NJ: Lawrence Erlbaum.
- Rosch, E. (1999). Reclaiming Concepts. In R. Nunez, & W. J. Freeman (Eds.), *Reclaiming cognition: The primacy of action, intention and emotion*. Thorverton, Eng.: Imprint Academic. Published simultaneously as a special issue of The Journal of Consciousness Studies, 6, No. 11-12, 61-77.
- Rosch, E., Mervis, C. B., Gray, W. D., Johnson, D. M., & Boyes-Braem, P. (1976). Basic Objects in Natural Categories. *Cognitive Psychology* , 8 (3), 382-439.
- Ruesch, J., & Kees, W. (1956). *Nonverbal Communication: Notes on the Visual Perception of Human Relations*. Berkeley: University of California Press.
- Sanoff, H. (1991). *Visual Research Methods in Design*. New York: Van Nostrand Reinhold.
- Scheer, B. C. (2010). *The Evolution of Urban Form: Typology for Planners and Architects*. Chicago: The American Planning Association.
- Shore, B. (1996). *Culture in Mind: Cognition, Culture, and the Problem of Meaning*. New York: Oxford University Press.

Shroff, L. (1934). Presidential Address. *Journal of the Indian Institute of Architects* , I (2), 47.

The Associated Cement Companies Limited. (1937). *The Modern House in India*. Bombay: The Associated Cement Companies Limited.

The Cement Marketing Company of India Limited (Publicity Department). (1942?). *The Modern House in India*. Bombay: The Cement Marketing Company of India Limited.

Tietz, J. (1999). *The Story of Architecture of the 20th century*. Cologne: Konemann.

Vakil, K. H. (1936). Architecture as a Social Necessity. (P. P. Kapadia, Ed.) *Journal of the Indian Institute of Architects* , II (3), 79.

van Leeuwen, T. (2005). *Introducing Social Semiotics*. London: Routledge.

Vinnels, D., & Skelly, B. (2002). *Bollywood Showplaces: Cinema Theatres in India*. Cambridge: E&E Plumridge Ltd.

Weber, E. (1989). *Art Deco*. London: Arlington Press.

Windover, M. (2011). *Art Deco: a Mode of Mobility*. Quebec: Presses de l'Universite du Quebec.

Windover, M. J. (2009). *Aestheticizing Mobilities: Art Deco and the Fashioning of Interwar Public Cultures*. Vancouver: University of British Columbia.

Wittgenstein, L. (1953). *Philosophical Investigations* (1986 ed.). Oxford: Basil Blackwell.

Wittgenstein, L. (1986). *Philosophical Investigations*. Oxford: Basil Blackwell.

Publications by the Candidate

Celebrating Modernity: An Analysis of Semiotic Diversity on the Facades of Bombay's Backbay Reclamation Buildings

Published in TEKTON- a Journal of Architecture, Urban Design and Planning, Volume 2, Issue 1, March 2015 [ISSN 2349-6282]

(with Nanki Nath)

"Display Typography of House Names in Mumbai's Residential Buildings: A Semiotic Intervention"

Typography Day 2013, International Conference IIT- Guwahati, March 2013

Published here http://www.typoday.in/2013/spk_papers13/mustansir-nanki-typographyday2013.pdf

"Splendid Isolation: A Semiotic Investigation into the Bhendi Bazaar Redevelopment Project"

International Conference on Islamic Arts and Architecture organized by the Jamia Millia Islamia, New Delhi 2011, published in the Technical Volume

Deco on the Oval: Celebrating Bombay's Best Loved Art Deco Facades

A Portfolio of Prints of Facades and Details (with a Curatorial Note by Professor Mustansir Dalvi) is published jointly by Sir JJ College of Architecture and the Urban Design Research Institute, 2015 [ISBN 978-93-81444-10-8]

The Past as Present: Pedagogical Practices in Architecture at the Bombay School of Art,

Book published jointly by Sir JJ College of Architecture and Urban Design Research Institute (UDRI), 2016 [ISBN : 978-93-81444-13-9]

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