ABSTRACT
In this article, I aim to provide a holistic understanding of urban design in downtown San Francisco and its historical role. I make a critical discourse analysis of two benchmark urban design plans – the Urban Design Plan 1972 and the Downtown Plan 1985 – to combine a content analysis of the plans with their contemporary and historical contextualisation to capture their relations to the urban design profession and discipline. A Kuhnian framework of paradigm is applied to evaluating their innovations. I argue that the innovations in the urban design plans for downtown San Francisco represent a paradigm shift in urban design.

INTRODUCTION
San Francisco is a frequent name in urban design literature, either used as a case study of urban design practices (Loukaitou-Sideris and Banerjee 1993; Punter 1996; Loukaitou-Sideris and Banerjee 1998; Punter 1999), or cited to illustrate urban design development in history (Southworth 1989; Abbott 1993). Indeed, San Francisco has been leading US cities in urban design plans: its Urban Design Plan 1972 made San Francisco the first American city to develop a city-wide urban design plan; its Downtown Plan 1985 was the first comprehensive downtown plan of its kind in America. Though the urban design plans of San Francisco have been copied or followed by other American cities and elsewhere, their significance is more than ‘being the first of its kinds’. Much scholarly attention has been paid to their professional innovations with a focus on analyzing their contents and presentations. However, a holistic approach is needed in order to better understand their value in the history of urban design professionally as well as intellectually.

In this article, I analyze the innovative practices of urban design in downtown San Francisco, and employ a holistic approach to evaluate their historical contribution to the urban design profession and discipline. Two benchmark urban design plans – the Urban Design Plan 1972 and the Downtown Plan 1985 – are studied by using a critical discourse analysis. In San Francisco’s General Plan, the Urban Design Plan 1972 became the Urban Design Element, and the Downtown Plan 1985 became the Area Plan for Downtown. They are important planning documents controlling urban design in downtown San Francisco. The focus of the analysis is on the content of the plans and their modes of presentation, as well as their broader social meanings and implications for actions. Combining a content analysis of the benchmark urban design plans with their contemporary and historical contextualization enables a holistic understanding of urban design in downtown San Francisco. The content analysis is made to identify innovations which contribute the philosophical and methodological advancement of urban design practice. Thomas Kuhn’s framework of ‘paradigm’ will be applied to evaluate the contextualization of the urban design innovations in downtown San Francisco to determine if they form a ‘paradigm shift’ (Kuhn 1970).

Following this introduction, section 2 introduces the analytical framework of critical discourse analysis of plans and the application of the Kuhnian ‘paradigm’ in urban design. Section 3 is a literature review of approaches towards urban design in downtown San Francisco, preceded by a brief historical backdrop of the implementation of the two benchmark plans. The next two sections provides a thematic summary of the two urban design plans – the Urban Design Plan 1972 and the Downtown Plan 1985. The last section discusses their philosophical and methodological innovations. The last section discusses the innovations of urban design in downtown San Francisco in relation to their contextualization of the urban design development to prove that the innovative practices represent a paradigm shift in urban design.

READING THROUGH URBAN DESIGN PLANS
Critical Discourse Analysis
For this purpose, I use the method of ‘critical discourse analysis’ that treats texts as points of entry into social phenomena (Fairclough 1995). This method focuses closely on text analysis, but connects them with their broader institutional and cultural contexts through the analysis of orders of discourse – genres,
discourses and styles (Fairclough 2003). MacCallum and Hopkins (2011) provide a good summary on how this method applies to analyzing plans: texts realize genres; genres are recognizable; texts of a particular genre (e.g., strategic metropolitan plan) share identifiable characteristics; genres might change as society’s expectations of institutional practices change; decision to change textual modes and styles are also decisions to alter the broader practices which such texts realize; many genres (e.g., policy documents) undergoing rapid changes in style and modes of representation reflect contemporary cultural and political shifts. This method is particularly useful to the study of social changes, including planning; it an effective method to compare plans, identify shifts, and contextualize changes (MacCallum and Hopkins 2011). Using critical discourse analysis, I will look at the three levels of meanings in the selected urban design plans: 1) factual meaning, or thematic patterns from plain text reading; 2) contextual meaning, or relation to political, social, economic, and physical conditions; 3) temporal meaning, or its historical changes based on the argument made by Ryan (2011) that beyond its “plain sense”:

“Plans are also ideological artifacts, vessels for larger intellectual concepts that are likely to have emerged before a given plan and are likely to survive it as well. Plans interpret these intellectual concepts and may even constitute a critical contribution to their development. In addition, plans are cultural artifacts whose content and appearance shed light on both the society that produced them and the larger cultural artifact (the city or region) treated by the plan. Finally, plans are historical artifacts that occupy a place in the planning profession, the plan’s subject neighbourhood, city, or region, and the society or societies that produced the plan.”

Paradigm Shift in Urban Design

The discussion of a paradigm shift in downtown urban design here is derived from the Kuhnian framework of paradigms in science (Kuhn 1970). The Kuhnian framework uses the term ‘paradigm’ in two different senses:

“On the one hand, it stands for the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community. On the other, it denotes one sort of element in that constellation, the concrete puzzle-solutions which, employed as models or examples, can replace explicit rules as a basis for the solution of the remaining puzzles of normal science.” (Kuhn 1970)

Kuhn further claims that philosophically, the second sense of ‘paradigm’ is the deeper of the two. In the history of science, scientists encountered anomalies that could not be explained by a prevailing paradigm, and then a new paradigm was created to address the problems – a paradigm shift occurred. Kuhn acknowledges several ways of using the concept of paradigm. Their implications on what makes a ‘paradigm shift’ thus falls into two broad strands. One strand is in its strict sense that a paradigm shift is a revolutionary shift in thought and fundamental theoretical changes. The other is in its more liberal way that a paradigm shift describes significant changes in thoughts, not necessarily fundamental to our world views or conceptions.

The application of the Kuhnian framework of paradigm and paradigm shift has extended to the discourse of urban design and planning. However, urban scholars differ in their identification and categorization of paradigms, depending on which sense of the Kuhnian paradigm they use. Taylor (1999) examines that three outstanding changes in planning thoughts in the post World War II in the English-speaking countries – from the planner as a creative designer to the planner as a scientific analyst and rational decision maker; from the planner as technical expert to the planner as a manager and communicator; from Modernist to Postmodernist planning thoughts – and asserts that none of the three changes represent a paradigm shift in the strict Kuhnian sense. Drawing on scholarly arguments on what makes an urban design paradigm (Madanipour 1996; Lang 2005)), and the Kuhnian framework, Garde (2008) posits that an innovation in urban design needs to satisfy at least two conditions to be identified as a paradigm: it can serve as an example for replication; it is conceived and promoted as a model of good design.

It is clear that Garde’s proposition of a paradigm shift in urban design is made in the liberal Kuhnian sense, not the strong and strict sense of the Kuhnian paradigm shift used by Taylor (1999) to examine the planning theories. Garde (2008) identifies two types of innovations in urban design: degenerative variations (e.g., gated communities, invented public places, suburban shopping malls, and the Edge Cities) and integrative paradigm (e.g., New Urbanism, Neighborhood Unit, and Garden City). Consistent with the Kuhnian framework of paradigms in science, Garde’s thesis is that the degenerative variations and problems of development subvert urban form, which in turn leads to the integrative paradigms – forming a paradigm shift in urban design. The Kuhnian paradigm was ever applied to examining downtown urban design too. Based upon case studies of recently completed projects in the downtowns of Los Angeles, San Diego, and San Francisco, Loukaitou-Sideris and Banerjee (1998) observe a profound transformation in the practice and purpose of urban design in the downtown areas – the privatization of open spaces or corporate open spaces. However, it should be pointed out that, though San Francisco is a case study for the argument of a downtown urban design paradigm shift from a political economic perspective, its policy
approach is distinctly different, which is acknowledged by Loukaitou-Sideris and Banerjee in their comparison of San Francisco and Los Angeles as ‘a tale of two cities’ (Loukaitou-Sideris and Banerjee 1993; Loukaitou-Sideris and Banerjee 1998). My discussion on urban design in downtown San Francisco as a paradigm shift differs from that of Loukaitou-Sideris and Banerjee in that Loukaitou-Sideris and Banerjee focus on case studies of downtown projects from the perspective of a political economy to investigate attitudes, institutions and processes, while my focus is on the urban design plans to investigate their contents and methodologies from a policy approach, which is where San Francisco differs.

APPROACHES TOWARDS URBAN DESIGN IN DOWNTOWN SAN FRANCISCO

A historical backdrop will help with understanding the urban design practice in downtown San Francisco as well as the way the scholarly attention was paid to it. San Francisco’s urban development in the 60s and 70s was governed by a post-War globalism and an aspiration for a world city status (Walker 1996; Godfrey 1997). It was believed that a modern downtown was necessary to better shape San Francisco’s future in anticipation of the rise of a post-industrial economy in America and San Francisco’s integration with globalization, particularly in terms of attracting people, business and tourism from the Pacific region. Consequently, San Francisco’s downtown marked by an instant ‘Manhattanization’, and its redevelopment scale was hardly matched by another American major city (McGovern 1998). This round of modern high-rise development in downtown San Francisco was dominated by new office construction (see Table 1).

Table 1 Office Construction in Downtown San Francisco 1964-1981

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Square Feet of Major Office Building Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>1,413,000</td>
</tr>
<tr>
<td>1965</td>
<td>1,463,000</td>
</tr>
<tr>
<td>1966</td>
<td>973,000</td>
</tr>
<tr>
<td>1967</td>
<td>1,453,000</td>
</tr>
<tr>
<td>1968</td>
<td>1,234,000</td>
</tr>
<tr>
<td>1969</td>
<td>3,256,000</td>
</tr>
<tr>
<td>1970</td>
<td>1,853,000</td>
</tr>
<tr>
<td>1971</td>
<td>NA</td>
</tr>
<tr>
<td>1972</td>
<td>1,961,000</td>
</tr>
<tr>
<td>1973</td>
<td>2,736,000</td>
</tr>
<tr>
<td>1974</td>
<td>2,065,000</td>
</tr>
<tr>
<td>1975</td>
<td>536,000</td>
</tr>
<tr>
<td>1976</td>
<td>2,429,000</td>
</tr>
<tr>
<td>1977</td>
<td>2,660,000</td>
</tr>
<tr>
<td>1978</td>
<td>NA</td>
</tr>
<tr>
<td>1979</td>
<td>2,532,000</td>
</tr>
<tr>
<td>1980</td>
<td>1,284,000</td>
</tr>
<tr>
<td>1981</td>
<td>3,029,000</td>
</tr>
</tbody>
</table>

Source: (Vettel 1984)

The massive post-War urban redevelopment contextualized one thematic strand of the literature on the urban design in downtown San Francisco – urban contestations on San Francisco’s downtown development. Largely from the perspective of urban politics, much of this strand of literature is on the conflicts between the two groups which held opposite stances on the matter of downtown development – the pro growth group and the growth control group, and how the latter prevailed over the former incrementally (Mollenkopf 1983; DeLeon and Powell 1989; DeLeon 1992; DeLeon 1992; Godfrey 1997; McGovern 1998; Hartman 2002; Hu 2012). The pro growth group was dominated by the business sector and supported by the city hall, while the growth control group was lead by activists and supported by the community. The pro growth group, as introduced above, was the major driving force behind the post-War urban redevelopment. The growth control group, on the contrary, grew from grassroots to fight against the negative impacts of the large-scale urban redevelopment, firstly on aesthetic and environmental concerns, and later on pollution, pressures on transport and housing, and social equity (Vettel 1984; Graham and Guy 2002; Hu 2012). The growth control group lamented not only the changed size and height of buildings, but also the loss of the city’s architecturally cohesive and pedestrian-oriented downtown following the sterile functionalist corporate International Style (Vettel 1984). They turned to public ballots known as ‘initiatives’ to curb the discretionary urban growth, and achieved their biggest victory in Proposition M 1986 – the strictest commercial office development ever imposed in a major American city. The influence of Proposition M on San Francisco’s downtown development has been fundamental: it represented not merely a change in the system but a change of the system (DeLeon 1992). This change in the contestations on downtown development has been depicted as a regime shift from a ‘pro growth regime’ to an ‘anti-regime’ (DeLeon 1992), or a political transformation from ‘hegemonic privatism’ to ‘counterhegemonic activism’ (McGovern 1998).
The discourse on downtown urban design was focused on the political context of urban contestation. The release of the Urban Design Plan 1972 and the Downtown Plan 1985 were the city government’s efforts to regulate the post-War redevelopment, as well as a response to the growth control movement.

The focus of the above literature provides a context of the urban designs plans in downtown San Francisco from a political-economy perspective. The same perspective is employed by a few authors to criticize the contents of urban design plans. Arguing that land uses are one of many results of the interplay between economic and political forces, Simmie (1987) contends that the interest of the economic sector (big and small business) is hegemonic, though there is a significant input of the interests of inhabitants. Hartman (2002) criticizes the Downtown Plan’s failure to limit the commercial development, little efforts to address the transportation and housing, and ignorance of the downtown’s relation to the rest of the city, issues of quality of life, neighborhood preservation, and class relations. Though a few issues criticized by Hartman are included in the Downtown Plan, the focus of Hartman’s criticism is that they are insufficiently addressed. It is true that social issues like class relations are missing. Keating and Krumholz (1991) agree that the most important deficiency of the Downtown Plan is its failure to address adequately the social and environmental problems caused by the development boom, and argue that social equity concerns should be seriously addressed in downtown plans. However, it should be noted that the Downtown Plan is short of social concerns, important social planning issues are major concerns of Proposition M 1986, and various linkage programs on housing, employment, historical preservation and public space before and after the Downtown Plan 1985 (Diamond 1983; Keating 1986; Hausrath 1988; Hu 2012).

Unlike the first strand of literature analyzing the political and economical forces that have shaped San Francisco’s downtown urban design plans as they are, the other strand of literature makes a content analysis of the urban design plans to captures its technical and thematic patterns. Vettel (1984) offers a technical review of the development of urban design regulations in downtown San Francisco to illustrate its evolution from ‘discretionary decision making’ to ‘demanding objective requirements’ with the imposition of the Downtown Plan. Vettel (1984) admits that the importance of the Downtown Plan lies in the city’s ambition to guarantee that ‘its growing downtown becomes not a dull and uncomfortable concrete wasteland, but an inviting, vital, diverse urban environment’. Vettel’s analysis was made right after the Downtown Plan was released, limiting its depth beyond the technical regulations and its association with urban design practices at the time. Punter (Punter 1996; Punter 1999) provides a more comprehensive analysis of urban design plans in San Francisco and its comparison with other West Coast US cities (Seattle, Portland, Irvine and San Diego). Punter (1996) summarizes eight prescriptive urban design themes that can be learned:

(1) the need for survey and analysis, or area appraisal, to underpin policy;
(2) the need for public consultation to be thoroughgoing on design matters, extending to devolved control;
(3) the need for design to have a strategic large scale dimension;
(4) the need to define broad principles of urban design against which applications can be genuinely evaluated, and to systematise the criteria for assessment;
(5) the equal importance of visual/contextual and public realm considerations in design;
(6) the development of principles of compatibility not conformity in architectural terms;
(7) the value of developing attractive, comprehensible, user-friendly guidance;
(8) the need for design quality to be a profound corporate objective.

Punter’s analysis of San Francisco’s urban design was not made in isolation, but together with other cities to form a community of common urban design themes.

Another group of literature in this strand does not particularly focus on a content analysis of San Francisco urban design, rather it incorporates San Francisco as an important case in a comprehensive content analysis of downtown urban designs in America to identify historical thematic patterns. Abbott (1993) examines American downtown policy discourse and planning since 1945 and summarizes five successive historical themes:

1945-55: The downtown as the unitary centre of the American metropolis required improved access through highway improvements and downtown ring road.
1955-65: Downtown understood as a failing real estate market appeared to require the land assembly and clearance associated with the urban renewal program.
1965-75: Downtown as a federation of subdistricts called for community conservation, historic preservation, and ‘human scale’ planning.
1975-85: Downtown as a set of individual experiences required regulation of private design and public assistance for cultural facilities, retail markets, open space, and other amenities.
1985-. Viewed as a command post in the global economy, downtown has required planning for expanded office districts and supporting facilities.

Abbott offers a very broad categorization of the thematic developments in American downtown urban designs, which are generally applicable to San Francisco, particularly the evolutionary phases after 1965. Along a similar thread of the thematic thoughts, Southworth (1989) provides an even broader categorization of historical urban design plans in America: compared with a study of plans in 1960-72 (early ‘urban renewal’ era of urban design), the study of urban design plans in 1972-89 (post ‘urban renewal’ era of urban design) indicates changes in goals, environmental quality concerns, analytical content, analytical methods, degree and type of public involvement, implementation techniques, theoretical foundations, and impacts. It is worth noting that the Urban Design Plan of San Francisco was released in 1972, the dividing year of Southworth’s analysis for urban renewal and post-urban renewal urban designs in America. However, acknowledging the compatibility of San Francisco’s urban design practice with these broad historical categorizations of urban design developments in American in general should not necessarily lead to an ignorance of the particularity of San Francisco’s downtown development and urban design. As it will be argued later in this article, in a way San Francisco’s particularity lies in its pioneering role in shaping the thematic shifts in American downtown urban design.

A few empirical studies do not analyse the urban design plans, rather they pay attention to San Francisco’s actual urban forms, such as Allan Jacobs’ analysis of streets as public spaces (Jacobs 1995), and Anne Vernez Moudon’s study of San Francisco’s architectural morphology (Moudon 1989). Their angles are more architectural or their focus is on the technical aspect of urban design practices in San Francisco. Loukaitou-Sideris and Banerjee (1993; Loukaitou-Sideris and Banerjee 1998) combine an analysis of specific urban design projects in downtown San Francisco (compared with Los Angeles, and San Diego) and policy analysis, and point out a phenomenon of public-space privatization that corporate open spaces reflect a market-driven urbanism – planned, designed, and packaged to satisfy an exclusive clientele. Their political-economic approach to downtown urban design is a step further from the thesis of Frieden and Sagalyn (1989) that downtown is not just a business district; it is an enterprise run by the city government and corporate interests. This thesis fits into the growth machine theory, which posits that a city is dominated by some land-based elite of the mayor, planning office, and downtown business interests, and argues that the very essence of a city is its operation as a growth machine (Molotch 1976; Logan and Molotch 1987; Molotch 1988; Logan, Whaley et al. 1997). But the applicability of the growth machine theory and its type to San Francisco’s urban development after the Downtown Plan 1985, particularly, Proposition M 1986, is challenge by the argument of an anti-growth machine in the case of San Francisco by Hu (2012). San Francisco presents more an anomaly than a commonality in the thesis of privatism-dominated downtown development.

The criticism of the contents of the urban designs plans in downtown San Francisco’ has been on its very regulatory nature. Both the Urban Design Plan 1972 and the Downtown Plan 1985 are control plans, and taken together, may be more stringent than those in any other major city in the US (Vettel 1984). Lai (1988) is also concerned with San Francisco’s total design control approach, which is seen as an ‘invisible web’ as opposed to the market-led capital web. Punter (1999) points out that the complex urban design review process in San Francisco seems to have been nearly as much a nightmare for the planners as for the developers. For Loukaitou-Sideris and Banerjee (1993; Loukaitou-Sideris and Banerjee 1998), San Francisco employs a ‘paternalist’ or ‘determinist’ style of urban planning in contrast to Los Angeles. In retrospect of the effect of the Urban Design Plan 1972 as a control plan, Rose (1999) observes that the plan has impacted the city more in what it has prevented, than what it has promoted.

**URBAN DESIGN PLAN 1972**

The Urban Design Plan comprises four sections: City Pattern, Conservation, Major New Development, and Neighborhood Environment. Each section is composed of four parts: an elaboration on human needs; an overall objective; a set of fundamental principles with illustrations and measurable criteria; a series of policies for implementation. In total, the Plan contains four objectives, 87 principles, and 46 policies within the four sections.

**City Pattern**

San Francisco’s city pattern is made up of water, hills and ridges, open spaces and landscaped areas, streets and roadways, and buildings and structures. The human needs for the city pattern range from perception to psychology: the image and character of the city; psychological effects upon residents of the city; identification of districts and neighborhoods; understanding of the city, its logic and its means of cohesion. It particularly points out two controllable elements that help strengthen the city pattern: visually prominent landscaping and street lighting.
The overall objective for the city pattern is ‘emphasis of the characteristic pattern which gives to the city and its neighborhoods an image, a sense of purpose, and a means of orientation.’ For this objective, 21 principles provide elaboration on the needs and characteristics on views, topography, streets, building form and major landscaping, upon which the city pattern depend. The majority of the principles elaborate on how the city pattern can be recognized, protected and enhanced through urban design at the street and open space levels, like landscaping, lighting, width and route of streets. Twelve policies necessary to achieve the objective are provided. They are centered on three categories of issues which are the concerns of the city pattern: image and character; organization and sense of purpose; orientation for travel.

**Conservation**

Conservation applies to both natural environment and built environment. The natural areas are irreplaceable resources that answer human needs for rest, escape and view. Older buildings are resources for character, culture, education and recreation. Traditional neighborhoods and streets are further resources for conservation. The objective for these human needs is ‘conservation of resources which provide a sense of nature, continuity with the past, and freedom from overcrowding’.

The majority of the 17 principles for conservation dwell on the protection of older buildings with historical values, the harmonization of new developments with historical neighborhood buildings through architectural details and consistent urban forms, and the preservation of street patterns and blocks. Ten policies stipulate approaches to achieve the outcomes in three areas: natural areas; richness of past development; street space.

**Major New Development**

The central concern of human needs for new development is ‘a matter of scale’. Scale is relative. Good scale depends on the balance and compatibility of its height and bulk with the total pattern of the land and the city. Unusual buildings and large building sites present the greatest problems and challenges for urban forms. The overall objective is ‘moderation of major new development to complement the city pattern, the resources to be conserved, and the neighborhood environment’.

Eighteen principles provide guidance and criteria on good skyline and urban form, and prevention of negative impacts by unusual shapes of tall buildings, and big bulks. The emphasis is on the visual effect of the city’s urban form and pattern. A number of technical specifications are provided on enhancing user’s experience at the street and public space for new developments. Nine policies suggest approaches for new developments in three areas: visual harmony; height and bulk; large land areas.

**Neighbourhood Environment**

Human needs for neighborhood environment are a tolerable and comfortable living environment, safe and free from stress. Many matters contribute to good neighborhood environment, including safety and security, neighborhood maintenance, open space and recreation opportunities, and streetscape. The objective is ‘improvement of the neighborhood environment to increase personal safety, comfort, pride and opportunity’.

A total of 31 principles on enhancing the neighborhood environment are provided, covering a range of urban design issues trees, open space and landscaping, sidewalks and streets, parking areas, traffic restriction, pedestrian friendly space, transport modes, and waterfront space. Fifteen policies suggest approaches towards the objective in four areas: health and safety; feeling of neighborhood; opportunity for recreation; visual amenity.

**DOWNTOWN PLAN 1985**

Downtown Plan contains seven sections of important issues to guide downtown development, ranging from commercial space, housing, and transport to seismic safety. Three sections are exclusively on urban design concerns: Open Space; Preserving the Past; Urban Form.

**Open Space**

There are three items of objectives for preserving and enhancing open space: ‘provide quality open space in sufficient quantity and variety to meet the needs of downtown workers, residents, and visitors; assure that open spaces are accessible and usable; provide contrast and form by consciously treating open space as a counterpoint to the built environment.’ A number of relevant policies are stipulated on how to achieve each objective, resulting in a total of 12 policies on open space. The objectives and policies are focused on two key requirements on open space – availability and accessibility for users; complementarity with surrounding built environment.
The Plan provides technical guidance for open space design and policy measures for creating more open space. It lists very detailed specifications (size, location, access, seating, landscaping, services, sunlight and wind, public availability, etc.) on different types of open space (urban garden, urban park, plaza, terrace, greenhouse, snippet, atrium, indoor park, public sitting, etc.). One benchmark target is everyone will be within 900 feet of a publicly accessible space ‘to sit, to eat a brown-bag lunch, to people-watch, to be out of the stream of activity but within sight of its flow’. The Plan requires the provision of publicly accessible open space for all new construction projects: one square foot of open space per 50 gross square feet of building space in the commercial zone; one square foot of open space per 100 gross square feet of building space in the retail zone. In addition, an open space linkage fee of $2 per square of new office building space is required to fund the acquisition and development of parks and open spaces in downtown areas.

**Preserving the Past**

This section contains one objective to ‘conserve resources that provide continuity with San Francisco’s past’, and three policies on preserving the historical buildings and designing new buildings in harmony with the old ones nearby. The Plan does not provide many technical guidelines. Rather, it includes two key measures for implementation. For one measure, it classifies downtown buildings according to their historical values. Category I and II are buildings of individual importance, and are considered Significant Buildings. Category III and IV are rated very good architectural design, and are considered Contributory Buildings. All non-rated buildings are defined as Category V. The classification system enforces measures and incentives for the retention or demolition of the old buildings. For the other measure, the Plan permits the Transfer of Development Rights (TDR) from historically rated buildings to new development sites in the district. It serves a dual purpose of retaining historical buildings and maintaining development potential in downtown areas.

**Urban Form**

The Plan is very specific in regulating urban form. It provides one objective and a few policies for each of the four aspects of urban form: height and bulk; sunlight and wind; building appearance; streetscape. For height and bulk the objective is to ‘create an urban form for downtown that enhances San Francisco’s stature as one of the world’s most visually attractive cities’. For sunlight and wind, the objective is to ‘create and maintain a comfortable pedestrian environment’. For building appearance, the objective is to ‘create a building form that is visually interesting and harmonizes with surrounding buildings’. For streetscape, the objective is to ‘create and maintain attractive, interesting urban streetscapes’. A total of 15 policies are stipulated on controlling new buildings so as to achieve good-looking skyline from a distance, harmonious building blocks and façades, and friendly street experience for pedestrians.

The Plan is the most technical in urban form. With detailed specifications, maps and illustrations, it regulates the shapes, volumes and styles of new constructions, and their relationship with the sidewalks and streets. It requires new constructions to be harmonious with the existing city pattern in scale and façade. It also requires decorative architectural variations and setbacks for the tower tops for interesting look and sunlight access at the street level. Large bulks and boxy shapes are prevented to avoid overwhelming aesthetic and psychological effects. Urban design considerations are focused on three levels: skyline composition, street level urban design and microclimate.

**INNOVATIONS IN SAN FRANCISCO’S DOWNTOWN URBAN DESIGN**

The question for discussion is: do the urban design plans for downtown San Francisco represent a paradigm shift in urban design? In order to answer this question, discussions on the two plans will be made both philosophically and methodologically: do they demonstrate sufficient newness in urban design plan philosophy and methodology to be qualified as a ‘paradigm shift’?

Philosophically, the urban design plans in downtown San Francisco are responsive and interventionist, and mean to be balancing. The Urban Design Plan 1972 and Downtown Plan 1985 responded to the large-scale urban development of the time, which had raised aesthetic and environmental concerns in the beginning, and later social concerns (Hu, 2011; Vettel, 1985; Hartman, DeLeon, McGovern). The two plans were efforts to address the problems caused by the previous urban development model (analogous to the ‘anomalies’ in the Kuhnian framework of a paradigm). Before them, San Francisco’s planning was described as minimal control and discretionary, and dominated by a private hegemonism (Vettel, Hu, McGovern). This laissez-faire tradition was superseded by the interventionist planning regulations in the two plans, which provide principles as well as technical details on desirable urban forms and individual project designs. The philosophical underpinning of the interventionist planning approach is skepticism of market forces which had dominated San Francisco’s downtown development before, and a belief that
government interventions guarantee a more equitable outcome (Hu, 2011). The supremacy of the interventionist planning did not come in due course; it came to fruition after decades of urban contestations (see, DeLeon, McGovern). The plans are meant to achieve a balance to redress the prior urban development practices. The balance, first of all, is a balance between property planning and development (Vettel, 1985), and secondly, a balance between the physical, social and economic dimensions of a plan, as stated in the Introduction of the Downtown Plan:

“The Downtown Plan grows out of an awareness of the public concern in recent years over the degree of change occurring downtown – and of the often conflicting civic objectives between fostering a vital economy and retaining the urban patterns and structures which [are] collectively for the physical essence of San Francisco.”

The afore-mentioned interventionist philosophy determines that the concerns of the urban design plans are more than the physical dimensions of conventional urban design. The urban design principles and policies on the physical dimension of the built environment have strong non-physical aspirations. The Urban Design Plan 1972 is not only a regulatory document and an implementation strategy, but an articulation of an urban design philosophy. The Plan is highly conscious of the social role of urban design as manifest in its elaboration on ‘human needs’ for each of its four sections. It promotes a philosophy that good urban design addresses the physical and the emotional and is a human need. Urban design is not merely a means of making a beautiful place, it is also essential to the quality of people’s lives, on a very individual, psychological level – reflecting the democratic ethos of the late 1960s, in direct contrast to the earlier slash and burn, top-down redevelopment programs (Rose 1999). The non-physical aspirations of the urban design elements in the Downtown Plan 1985 go even further. In addition to redressing the Modernist style buildings that negatively impact San Francisco’s urban character aesthetically and socially, two primary goals of the Downtown Plan 1985 are livability and economic competitiveness: livability is to be achieved through better urban design of open space, urban form and historical protection; the competitiveness of the city requires the kind of environment that is attractive, compact, walkable, and accessible (Hu 2012).

On the physical and aesthetic dimension of urban design, the thematic linkage between the Urban Design Plan 1972 and the Downtown Plan 1985 is the Lynchian approach on urban forms and images. A pioneer in Postmodernist urban design thoughts, the Lynchian approach rejected the Modernist design principles which were seen as authoritarian, elitist, deterministic and top-down (Loukaitou-Sideris and Banerjee 1998). On the contrary, the Lynchian approach emphasised the importance of environmental psychology and environmental behaviour, that is, knowing how people use and perceive a city, or a city ‘imageability’ (Lynch 1960). In San Francisco, the Lynchian approach was used to develop design guidelines and regulations to protect and improve the appearance of the city. The belief is that urban design could directly and indirectly enhance the quality of life of individuals through the promotion and preservation of the imageable elements of a city (Rose 1999). Meanwhile, the promotion of an urban character harmonious with traditional architecture and reminiscent of old buildings indicates a flavor of Postmodernism and departure from the Modernist International Style (Lai, 1988; Punter, 1999).

Methodologically, the Urban Design Plan 1972 and the Downtown Plan 1985 demonstrate innovative practices in two major aspects. One is the professional research-based process and consultation in preparing the plans; the other is the shift to urban design as public policy. The Urban Design Plan 1972 was well resourced in terms of time, funding and professional expertise. It preparation started from 1967 as a planner’s initiative. Funded by the Federal Government, a two-year study was carried out in 1968-1970, which involved the planning director Allan Jacobs, consultants Marshall Kaplan, Herbert Gans and Donald Appleyard, and a citizens’ advisory committee. The final Plan was built upon eight preliminary reports designed to encourage public response, three specialized studies, and pioneering consultancies of the time. This kind of using well-sourced surveys for making design plans presented a contrast to the reluctance of design professionals to use the empirical knowledge base to shape designs, and often haphazard and too subjective urban design analysis and problem identification (Southworth 1989; Lang 2005). An earlier version of the Downtown Plan was released by the planning director Dean Macris in 1983. It was finally approved by the Board of Supervisors in 1985 after two years of debates between pro-growth and anti-growth groups (DeLeon 1992; DeLeon 1992; Hu 2012). These preparation steps are important in achieving quality in the plan presentation and content. In terms of clarity of expressing plan objectives, design principles and policies, and comprehensiveness in covering key urban design issues, both plans are pioneering models of best practices. Punter (1999) observes that

“All agree that the design appraisal and character assessment carried out for the 1972 Urban Design Plan was the most thorough and professionally/intellectually advanced series of urban design studies ever undertaken, and that policies which emanated from this work remain relevant today and into the future. Similarly, the clear and economical expression of goals, objectives and policies in both the 1972 and 1985 (Downtown) plans, remain a model of their kind.”

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As a model of urban design plan presentation and coverage, they were widely followed (or copied) in America (e.g. San Diego, New York) and overseas (Japan).

Both plans employ a ‘total design’ approach with detailed and precise controls (Lai, 1988). The total design approach controls the concise objectives, design principles and policies, as well as the detailed standard of performance, quantitative criteria, maps of special heights and bulk districts, and visuals of urban forms and architecture. This total design approach is characterized as an ‘invisible web’ implemented by the police power of zoning (Lai, 1988), in contrast to the more flexible ‘capital web’ of market-led design initiatives (Buchanan, 1987). The control mentality in San Francisco was strengthened by the passage of Proposition M and the introduction of the Beauty Contest program in 1986. Proposition M imposed a permanent annual cap of 950,000 square feet on all new buildings of more than 25,000 square feet, and reserved an annual area of 75,000 square feet for small buildings – the strictest control on new development in an American city. The Beauty Contest program required that the proposed new projects each year needed to be evaluated against each other by a set of criteria on architecture and urban design qualities.

More importantly, the design plans of San Francisco represent a significant methodological shift from architectonic approach to urban design as public policy. Previously, urban design was mostly envisioned by architects and designers in drawings in the way they designed a building. With the San Francisco Urban Design Plan came a significant change in the way urban designers seek to shape the built environment in cities – rather than use an architectonic approach, the urban designers sought to form the built environment by influencing decisions with policies, plans, programs and guidelines (George 1997). This Lynchian approach of urban design as public policy marked a shift from Modernist to Post-Modernist urban design process and procedure (George 1997; Loukaitou-Sideris and Banerjee 1998). The tactics of urban design as public policy include: to describe certain maximum, minimum, or otherwise desirable characteristics of individual buildings; to go beyond individual buildings to the relative position of different buildings; to offer incentives for making certain desirable decisions (or not making certain undesirable decisions) (George 1997). The first two tactics are reflected in physical regulations and desirable performance for users in both the plans. The third tactic is seen in the innovative TDR and Linkage programs used in the Downtown Plan for historical conservation and incentive for open space. Through the 1980s, the practice of urban design as public policy in the forms of sophisticated plans and review processes took root across many American cities (Punter 2007). Lang (1996) categorizes two ways of considering types of urban design projects: one in terms of the products, and second, in terms of methods by which they are developed, and argues that the first is traditional but the second is fundamental to understanding the activities of urban design and the responsibilities of urban designers. The innovative practice of urban design as public policy offers a new spectrum of understanding urban design.

### DISCUSSION AND CONCLUSION: A PARADIGM SHIFT?

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Philosophical and methodological innovations in the urban design plans for downtown San Francisco are summarized in Table 2. Applying the liberal sense of the Kuhnian paradigm as well as Garde’s criteria of urban design paradigm – serve as an example for replication; conceived and promoted as a model of...
good design – attests a confident conclusion that urban design in downtown San Francisco presents a paradigm shift. Both the Urban Design Plan 1972 and the Downtown Plan 1985 are the first of their kind for an American major city and elsewhere. They put San Francisco in a leading position of downtown urban design. The Downtown Plan won the National Merit Award from the American Institute of Architects (AIA) in 1985, appeared on the front page of the New York Times twice, and triggered the debate of ‘San Francisco-ization’ of Manhattan (DeLeon 1992). San Francisco has been rarely missing in the literature on good urban design, and is often included as one example to learn lessons, for example, for British cities (Punter 1996). As a model, San Francisco urban design was followed by American cities (e.g., San Diego, New York), and elsewhere like Japan. In literature on defining innovative urban design, San Francisco has been a frequently cited case (Jacobs and Appleyard 1987; Lang 1996; George 1997; Schurch 1999).

The next question is: does urban design in downtown San Francisco represent a paradigm shift defined by the strict sense of the Kuhnian paradigm? The strict Kuhnian paradigm ‘stands for the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community’ (Kuhn 1970). The key to answering the question is to prove whether the San Francisco urban design is one isolated case or is representative of a community sharing common practices. The above argument illustrates that the San Francisco case has been a model of good practice for others to follow, so it is not an individual case standing alone. The remaining part of the answer lies in identifying the community sharing the entire constellation of beliefs, values, and techniques of the San Francisco urban design. Some historical studies of American urban design evolutions have proven the existence of such a community. A review of 70 urban design plans for 40 towns and cities in the United States prepared between 1972 and 1989 reveal common themes such as more concerns for user needs, more focus on managing the quality and character of large areas through policies, standards, and design review, and more emphasis on the assets of environment (Southworth 1989). It is observed that ‘many of the goals and methods of urban design today are a response to the failures of urban renewal projects that often demolished too much of the city, leaving a barren urban landscape with no sense of place or community’ (Southworth 1989). This observation about an urban design paradigm is consistent with the Kuhnian framework that the anomalies – urban renewal programs – led to the development of a new paradigm. A historical study of American downtown planning since 1945 indicates strong thematic commonalities in the periods of 1965-1975 and 1975-1985: downtown as a federation of sub districts called for community conservation, historic preservation, and human scale planning; downtown as a set of individual experiences required regulation of private design and public assistance for cultural facilities, retail markets, open space, and other amenities (Abbott 1993). Punter (1996; Punter 1999) reviews the urban design control experience and developments in five American west coast cities (Seattle, Portland, San Francisco, Irvine and San Diego), and identifies a set of key issues which are generalizable for British cities. Punter (2007) observes the evolution of urban design public policy: American west coast cities such as San Francisco and Portland developed sophisticated plans and review processes in the early 1970s, and through the 1980s design review took root across many American cities. These empirical experiences point out that the urban design for downtown San Francisco did not occur as a single innovation only; it was to be shared by a community of common urban design beliefs, values and techniques, which lasted for a long time historically.

The above discussions point to the conclusion that urban design in downtown San Francisco represents a paradigm shift in both liberal and strict senses of the Kuhnian framework.

REFERENCES


