

Appendix Table A.1. Society Sub-System of Urban Planning and Urban (Sustainable) Design Eras

	URBAN PLANNING ERA: 1950-1979		URBAN (SUSTAINABLE) DESIGN ERA: 1980-2016	
	1950-1970	1970-1980	1981-1995	1996-2016
Society				
Social system	<p>Barcelona’s population soared from 1,280,179 inhabitants in 1950 to 1,557,863 in 1960 and 1,745,142 in 1970. Most of this growth—79% in the 1956-1960 period, 90% in the 1961-1965 period, and 57% in the 1966-1970 period—was driven by the arrival of rural immigrants (Ferrer and Nel.lo 1990).</p> <p>The construction of housing superblocks in isolated areas in the periphery of the city began in the 1950s and grew exponentially during the 1960s and early 1970s. Shantytowns in the outskirts of the city continued to multiply.</p> <p>By the early 1970s, Barcelona had become one of the highest density cities in the world with 300 habitants per ha (Tatjer 2009), and an area per habitat as low as 34.5 square meters, a third of the minimum recommended (Camarasa 1977).</p>	<p>Barcelona’s population stagnated during the 1970s as a result of both a decrease in fertility and a drop in immigration (Ferrer and Nel.lo 1990).</p> <p>In the 1970s, Barcelona’s unemployment rate soared to over 20 percent, further deepening the housing and public infrastructure crises, worsening living conditions, increasing the social segregation, and rising social conflict (Trullén 1988).</p> <p>Starting in the late 1970s, construction of a program of democratic citizenship and implementation of national welfare policies favoring education, training and health.</p>	<p>Unemployment rate dropped from 17.75% in June 1986 to 11.6% in September 1989.</p> <p><i>“The city’s major intervention projects (of the 1980s and early 1990s) were seen as a strategy to redress balance”</i> (Busquets 2005), foster social cohesion, and a <i>“sense of belonging to the city”</i> (García-Ramon and Albet 2000).</p> <p>Social diversity replaced social and spatial segregation, urban identity was built around <i>“Barcelonity”</i>, and the <i>“discourse of class was replaced with one of municipal citizenship”</i> (McNeill 2003) generating <i>“a common democratic culture”</i> in the city (Mascarell 2007).</p> <p>The gentrification process resumed.</p>	<p>International immigrants, grew to represent close to one fifth of the population by 2009 (up from less than 2% in 1996).</p> <p>Aggressive entrepreneurial urban regeneration that disregarded citizens’ needs and voices.</p> <p>Gentrification in Old Town.</p> <p>Over time, immigrants’ low and irregular incomes prevented or excluded immigrants from accessing quality housing, segregating them in overcrowded sublet conditions in run-down parts of the inner city or the periphery of Barcelona (Pareja 2005; and Terrones 2007).</p> <p>Increasing social conflict among the different groups and threatening social cohesion.</p> <p>After 2008, the Spanish unemployment rate soared to 23</p>

	<p>While the bourgeoisie settled in the <i>Eixample</i> and around the <i>Diagonal</i>, the working class remained in <i>Ciutat Vella</i>, and the migrant workers were pushed to the peripheral neighborhoods.</p> <p>The dispersion of land prices further pushed industries to the periphery of the city, and segregated social classes to different areas of the city (Ferrer and Nel.lo 1990).</p>			<p>percent in 2011, income inequality rose, and poverty escalated. In Barcelona, unemployment more than doubled within 5 years from 7.4% in 2006 to 16.9% in 2011 (Observatorio Barcelona 2013).</p>
Individual development	<p>Starting in the late 1960s, the neighborhood associations (<i>comisiones de barrios</i>) led the urban social movements through different forms of protests.</p> <p>Despite the lack of social liberties, the neighborhood protests coincided with other group's clandestine activities against the political regime, contributing to a wider protest movement at the city level.</p> <p>The fight against the dictatorship unified the urban social movements by giving them a common dissenting target.</p>	<p>In 1973, Barcelona's neighborhood associations occupied the city hall to protest against a <i>Partial Plan</i> that would have destroyed 4,730 homes, resulting in the successful halt of the plan and the demotion of Barcelona's Mayor Porcioles the next day by the Spanish government (Calavita and Ferrer 2000).</p> <p>Beginning in 1975, local initiatives involving transdisciplinary participatory processes with architects, sociologists, journalists and neighbors developed the <i>Social Plans (Planes Populares)</i> whose objective was to collect the different groups' multiple objections to the 1974 BMMP</p>	<p>Urban social movements in Barcelona progressively lost their potential and connectedness.</p> <p>Political opposition dimed.</p>	<p>Urban sprawl generated massive citizens' objections and frustration in the metropolitan area.</p> <p>Downtown Barcelona's soaring overnight stays from 3.8 million in 1990 to 12.4 million in 2008 (Turisme de Barcelona, 2009) generated escalating tensions over the local residents' "<i>right to sleep</i>" versus tourists' "<i>right to enjoy a Mediterranean nightlife</i>" (Degen 2004).</p> <p>Squatters began settling in Barcelona in the mid-1980s, the cooperative movement re-emerged in Barcelona in the 1990s, and other activists and decent housing movements emerged demanding a solution to</p>

		(Magro 2014). Specialist magazines such as CAU, <i>Quaderns</i> , and <i>Novatecnia</i> “established a rigorous, critical discussion of Barcelona’s urban problems during the 1970s (Busquets 2005)”, hence also contributing to Barcelona’s cultural, human and social capital.		citizens’ problems. The 15M movement. In 2014, <i>Barcelona en Común</i> (BEC) was created.
Government	Totalitarian system. Liberalization of housing policy. The 1953 Barcelona District Plan (BDP53) aimed at densifying the Barcelona. A loophole allowed municipalities to override the BDP53 plan with <i>Partial Plans</i> to the advantage of private developers well connected to the regime’s power structure (Calavita and Ferrer 2000; and Herce 2013).	Because of the massive opposition to the 1974 BMMP, the Spanish government replaced a benevolent mayor (Masó) with an intransigent one (Viola), well connected to the regime’s power structure. Franco died in November 1975. The 1976 BMPP aimed at reducing the allowable densities from a potential of 9 to 4.5 million people, and reclaiming land for public use. Viola was soon required to resign due to the constant neighborhood associations’ complaints regarding real-estate speculation going on during the revisions of the BMMP. In December 1976, he was replaced by mayor Socias, who led the city through democratic	The municipality focused on broader and more ambitious projects, whose objective was to address the lack of facilities and services in Barcelona’s periphery, and mitigate the social segregation and poor living conditions of the “ <i>Barcelona of Porcioles</i> ” To implement education, health, and social services, Barcelona built a complex multi-level governance model, integrating the municipal government with other local administrations (regional and provincial) as well as social partners (business and trade unions) and NGOs, and financed with funds from regional, national and European institutions (Truño 2000). Beginning in the mid-1980s,	Shift towards more neoliberal policies as a result of the conservative party (<i>Partido Popular</i>) winning the Spanish general elections in 1996. Further liberalization of land in 1998. Weakening of the inclusive governance model. The new elected conservative (<i>Convergencia i Unió</i>) mayor, Xavier Trias, in 2011. <i>Barcelona en Común</i> (BEC) wins municipal elections (in coalition) in 2014. Transformational leaders entered the municipal administration when Ada Colau was elected mayor of Barcelona in 2015.

		<p>transition.</p> <p>In 1977, Parliamentary elections and the Generalitat de Catalunya were restored, and in 1979, the democratic municipal election was celebrated.</p> <p>Starting in the 1970s, the local administration began covering basic services, consequently, improving the poor's living conditions.</p> <p>The new democratic government absorbed transformational leaders.</p>	<p>Barcelona's new economic growth model gave rise to public-private partnership PPPs in the area of economic development, making Barcelona's urban planning and implementation heavily dependent on private funding (Marshall 2000).</p>	
--	--	---	--	--

Appendix Table A.2. Support Sub-System of Urban Planning and Urban (Sustainable) Design Eras

	URBAN PLANNING ERA: 1950-1979		URBAN (SUSTAINABLE) DESIGN ERA: 1980-2016	
	1950-1970	1970-1980	1981-1995	1996-2016
	Support			
Infrastructure	<p>The share of the Spanish labor force working in the industrial sector grew from 23.5% in 1950 to 34.6% in 1970. Industrialization concentrated in the old industrial areas of Barcelona and Bilbao, and the capital, Madrid (Ferrer and Nel.lo 1990).</p>	<p>The economic recession also brought the scarcity of capital for developers bringing the price of land down (Calavita and Ferrer 2000).</p> <p>The industrial crisis and its expansion to other sectors further reduced Barcelona's industrial</p>	<p>In the 1980s, public infrastructures soared in Barcelona, replacing the city's deficiencies in public facilities, green spaces, public transportation, and public libraries and schools, and reusing the unoccupied or abandoned (frequently industrial) spaces</p>	<p>Housing prices increased 175% between 1998 and 2008 (Gonzalez and Ortega 2013). In Barcelona, the price hike was even greater with prices for new dwellings tripling (after adjusting prices for inflation) from €2,035 per square meter to €5,918 per square meter from 1996 to 2008 (Ajuntament</p>

	<p>Barcelona's housing stock escalated from 282,952 to 1,028,634 units (Ferrer and Nel.lo 1990). Housing densities of 560 to 800 dwelling per ha were frequent, even though the maximum threshold was 400 (Solans 1997).</p> <p>Development of Barcelona's highway system.</p> <p>Between 1960 and 1970, the <i>Partial Plans</i> increased by 12% the areas for residential use, 53% those for industrial use, and 23% those for transportation infrastructures to the detriment of green spaces and public facilities, which lost 43% and 46% of the BDP53 originally assigned space, respectively (Ferrer and Nel.lo 1990).</p> <p>The concentration of services in <i>Ciutat Vella</i>, <i>Eixample</i> and the area of the <i>Diagonal</i>, added to Barcelona's radial public transportation system pushed up these areas' land prices and widened the dispersion in land prices across the different neighborhoods (Nel.lo 1987). According to Lluch and Gaspar</p>	<p>capital and considerably slowed down its private sectors' financial capital.</p> <p>The political uncertainty that accompanied the transition to democracy and fears of socialism and expropriation of property also pushed land prices down.</p>	<p>resulting from the industrial, economic and political crises.</p> <p>1986 nomination to host the 1992 Olympic Games boosted public regional and national investment to finance the city's large-scale public works projects and attracted much private investment to the city.</p> <p>Housing prices soared. For instance, within a year (from 1987 to 1988), housing prices increased by 51% in <i>l'Eixample</i> and 100% in <i>Diagonal</i> and <i>Pedralbes</i> (Calavita and Ferrer 2000).</p> <p>In 1988, the <i>Plan for Hotels</i> laid the foundations for making Barcelona a tourist attraction and boosting its tourist industry.</p> <p>Municipal intervention aiming at connecting and rebalancing the different areas of the city, and included the infrastructure of the 1992 Olympic Games. It also implied reorganizing the road network and defining nine areas of new centrality, plus the arrival of the <i>Diagonal</i> thoroughfare to the sea, the use of large-scale buildings as museums and cultural</p>	<p>de Barcelona 2009).</p> <p>Unaffordable housing prices also expanded to the periphery.</p> <p>Barcelona's housing prices fell 12% between 2007 and 2009 (Idealista.com 2009).</p> <p>The bursting of the real-estate bubble and the halting of credit lending led to the collapse of Barcelona's urban land and capital as construction work stopped, lots were left vacant and many buildings idle.</p>
--	--	--	---	---

	(1972), the land price in the area of the <i>Diagonal</i> (2,000 <i>pessetes el pam quadrat</i>) was more than 4 times that of the suburban area of the <i>Guinardó</i> (450 <i>pessetes el pam quadrat</i>) and 80 times greater that of the <i>Prat de Llobregat</i> in the periphery of the city (25 <i>pessetes el pam quadrat</i>).		infrastructure (theaters and the like), the role of Old Town (<i>Ciutat Vella</i>), and Barcelona's seafront.	
Economic system	<p>Economic liberalization.</p> <p>US economic aid and intense foreign direct investment.</p> <p>Thriving tourism.</p> <p>Remittances from Spaniards working abroad.</p> <p>Booming car industry.</p> <p>Spanish GDP grew an average of 8.6% from 1961 to 1966, and 5.8% from 1967 to 1972.</p>	<p>With the 1973 energy and economic crises, the industrial crisis affecting Barcelona worsened and expanded to other sectors, especially the construction sector (Ferrer and Nel.lo 1990).</p> <p>The economic recession lasted from 1974 to 1985.</p>	<p>Liberalization of the mortgage market in 1981.</p> <p>Spanish integration to the European Union (EU) in January 1986.</p> <p>Improved economic confidence, boosted corporate investment and employment, and increased household incomes and demand.</p> <p>Consumption soared as reflected by the doubling of new vehicles registration from 114,077 in 1986 to 237,000 vehicles in 1989, and the building of new housing units from 11,621 to 26,330 (Ferrer and Nel.lo 1990).</p> <p>From 1985 to 1988, Barcelona's commercial electric consumption increased by 15%, long-distance calls rose by 74%, and the demand of concrete escalated by 180%.</p>	<p>During the 1990s, Barcelona's (and Catalonia's) GDP per capita grew an average of 2.4% per year, and 2.8% from 2000 to 2005 (Parellada 2004).</p> <p>New economic growth model for Barcelona, based on construction, tourism and service sectors.</p> <p>Entry into the European Monetary System and loose lending result of fierce competition among financial institutions.</p> <p>Interest rates fell, down-payment requirements loosened and credit standards tanked.</p> <p>Immigrants were responsible for 20% to 25% of the gains in the Spanish GDP per capita (Bank of Spain 2006).</p> <p>After 2008, the real-estate bubble burst, credit lending stopped, the</p>

				<p>Spanish GDP growth collapsed.</p> <p>Barcelona's local government continued to pursue a growth model for Barcelona that sought international investment through making Barcelona a reference of "smart cities", on the one hand, and a tourism industry, on the other (Degen and García 2012).</p>
--	--	--	--	---

Appendix Table A.3. Nature Sub-System of Urban Planning and Urban (Sustainable) Design Eras

	URBAN PLANNING ERA: 1950-1979		URBAN (SUSTAINABLE) DESIGN ERA: 1980-2016	
	1950-1970	1970-1980	1981-1995	1996-2016
Nature				
Resources	Massive use of land and natural resources with the booming construction of rainwater reservoirs beginning in the 1950s and the building of nuclear plants, result of the mid-1950s Spanish-US treaties.		Barcelona's natural capital downfall accelerated as domestic waste production increased by 32.5% in only three years (from 1985 to 1988).	<p>2003 heat wave.</p> <p>2007 energy black-out.</p> <p>2008 water drought and the collapse of the sewage water system.</p>
Environment	Environmental crisis due to the rising demand of resources, and the massive emission of air, soil contamination, and water pollutants.	The vulnerability of Barcelona's natural capital persisted up until the early 1990s.		Exponential growth of carbon emissions.

Appendix Table A.4. Reasons for Barcelona Urban Social Movements' Loss of Potential and Connectedness

1. The new democratic local government had effectively addressed most of the neighborhood associations' claims on specific urban issues, such as lacks in education, health services, and public spaces in the different neighborhoods.
2. The new administration hired many of the former leaders, members, and sympathizers of the neighborhood associations, incorporating their views in the city's governing coalition, but also absorbing them into the political system.
3. The local administration provided funds and offices to the Federation of Neighborhood Associations making their objections to the municipal power more difficult (Calavita and Ferrer 2000).
4. The 1977 *Social Compromises (Pactos Sociales)* between the Spanish government, the private sector and the labor unions set the grounds for minimum social conflict with the new democratic government at all levels of the administration.
5. The collective Catalan identity and new sense of place and city pride that accompanied the urban regeneration of Barcelona (Associació Pla Estratègic Barcelona 1994; Subiros 1999; Rodríguez Morató 2008) mitigated any objecting voices.
6. The economic expansion, the EU entry, and the Olympic host nomination set a tone of euphoria across the population that quiet any dissenting voices until the end of 1992.