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Al-Faisal Innovation District: New urban renovation tools for old Arabian city centres.

PLENARY 5
The new role for STPs: driving city change

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Al-Faisal Innovation District: New tools of urban renovation for old Arabian city centres

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Executive Summary

This paper draws on recent conceptual approaches of economic and urban growth, in which the accumulation of knowledge is the fundamental driving force behind growth.

From different aspects, this paper will go through a comparative study between "Innovation Districts" and "Science & Technology Parks" models both have so many shared characteristics and features. But still, a few amounts to studies were dealing with the impact of these two models on cities reform and development strategies.

The paper is divided into two parts:

- Part one: a group theoretical hypotheses and arguments for answer a group of raising questions like: How suitable are the models of Innovation Districts, Science and Technology Parks or creative hub for the case of Arabian grand cities?

- Part two: a case study for "Al-Faisal Innovation District" proposal, which have been approved by the stack holders and local government for action plan development stage.

Keywords: innovation districts, knowledge-based industries, urban renovation, king Faisal, Arabian cities

1. Towards a Knowledge society – a global Context:

Witnessing the era of knowledge in many urban regions growing an emerging set of functions competitive advantages - such as higher education, research and human resources development- within the functions and responsibilities of development partners in the city or region urban and this means that the capacity of local institutional and technical skills are needed now more than ever to maximize the competitiveness of the city.

Cities have become pivotal driving forces of development, locally in terms of regeneration of depressed areas and marginalized sectors and globally for regional competitiveness and trans-border cooperation. Cities are techno-hubs of global flows and they play the role of centres of innovation, as well as of new production and creativity regulated by relations of competitiveness and cooperation.

The current development of the knowledge economy, regarding networks and pipelines of material and immaterial flows of production and techno-creative innovations, highlights the economic paradigm in which goods and services are not tied up, as before, with the local factors of the Fordist system. [1]

[1] Angélo Battaglia and Diane-Gabrielle Tremblay." **22@ and the Innovation District in Barcelona and Montreal : a process of clustering development between urban regeneration and economic competitiveness**", Research note.(2011)

1.1. Saudi Arabia demographic and socio-Economical mood:

1.1.1. Economic indicators:

In 2008, Saudi Arabia joined the Top 20 countries in the World Bank/IFC's Doing Business report, advancing further than any other nation in the group. The Saudi's ongoing reform efforts have brought the Kingdom within reach of our goal of achieving 10x10, and foreign investors and domestic entrepreneurs are taking notice. UNCTAD's latest World Investment Report showed that Saudi Arabia received FDI inflows exceeding US$24 billion in 2007, a 30 percent increase over 2006, and making Saudi Arabia the region's largest FDI recipient.

Yet, significant challenges remain. In too many areas, such as trading across borders and enforcing contracts, slow bureaucratic machinery increases transaction costs and prevents companies from fully realizing the benefit of newly enacted reforms. In education, outcomes have not kept pace with the high level of expenditure. Such crucial sectors as banking and information and communications technology remain underdeveloped by world standards, holding back investment and innovation.[2]

Thus, most global competiveness reports have good records for the progress of the Saudi economy and the ease of doing business, which has jumped so dramatically during the last decade from 64th in 2004 position to the 16th position in 2008.the real challenge in reinforcing the human capital of Saudi Arabia and the soft power of researchers, scientist and creative minds.

1.1.2. Social and demographic indicators:

The positive indicators of Saudi social and demographic patterns shows that the vast majority of the Saudi population are under 35 years old (70%),which is a very promising record for an emerging economy. And the labour force participation (15-60 years) is increasing steadily to reach a percentage of 58% of the total population by 2020.but still, the unemployment rate is increasing rapidly to reach 15% in 2005.Also, Saudi Arabia is a multicultural community ,which hosts more than 7 million foreigner ,occupying more than 55% of the nations workforce.[3]

Also, more than 82% of Saudi population lives in cities,58% of urban citizens concentrate in three major metropolitan regions :Al-Damam,Al-khobar and AlDahran eastern metropolitan region(,Al-Riyadh central metropolitan region and Mekkah-Jeddah western metropolitan region.[4]

1.1.3. Science and Education indicators:

Moreover, the most significant reform efforts during the last two years have arguably focused on educational and judicial issues. In both areas, King Abdullah has started ambitious Modernization programs.

It is too early to judge results, however, as the reforms will require the revamping of complex and slow-moving bureaucratic apparatuses, a process which even under the best of circumstances will take several years. The creation of the King Abdullah University of Science and Technology, which draws on foreign faculty and students and allows gender mixing on its campus, is emblematic of the king's ambition to engage in socio-cultural modernization through a limited number of flagship projects.

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[2] The Competitiveness Review, ,An Update on Saudi Arabia's 10x10 Program, January 2009, www.saudincc.org.sa

[3] The Arab News:" **Saudis need extra training 'to replace expats'**,2 June 2013, http://www.arabnews.com/news/453731

[4] AL-Eqtisadiah Newspaper **"Universities and studies: Minister of Higher Education: the number of Saudis on scholarships abroad 148 thousand"**, ,16 April 2013,issue 7127

Also, more than 149,000 Saudi are studying abroad, the Saudis are ranked in the fourth position among foreign student in Science and Engineering in USA[5] , with total number of 11,500 enrolled students in American Universities.[6]

Education expenditure has risen sharply in the course of the recent oil boom, reaching about a quarter of the national budget and about 9% of GDP in 2009. The quality of public education has not necessarily increased at the same rate, however.

1.1.4. *R&D and Innovation indicators:*

As in other Arab countries, R&D spending in Saudi Arabia remains very low, with Aramco and state heavy-industry giant SABIC the only corporate entities engaging in significant research, sometimes in cooperation with the (state-run) King Abdulaziz City for Science and Technology.

With the exception of the small University of Petroleum and Minerals, public universities are of low quality. The newly founded King Abdullah University of Science and Technology is likely to change this, however, as it has been furnished with a $10 billion endowment and has managed to attract international faculty. In the higher education system more broadly, quantitative expansion has in recent years received more attention than qualitative upgrades.

Within such a massive boom of Saudi science and research infrastructure, Some promising indicators shows that King Fahd University of Petroleum and Minerals, ranked 17 in the world among universities in the number of patents issued in 2012, has made Saudi Arabia ranks thirty the number of global patent, According to the annual statistical issued by the Office of the U.S. patents.[7]

1.2. "Innovation Districts" model in the Arab world: the constrains

Based on previous indicators, The Kingdom of Saudi Arabia continues to enjoy its standing as the largest economy in the Middle East through its leadership's conservative economic policies and continued political stability. Throughout the past few years, the government has supported various initiatives boosting spending across the board, including infrastructure projects, social programmes, healthcare and education, thereby increasing investment opportunities and creating a more business-friendly investment climate.

Despite the global slowdown of economic growth, Saudi Arabia enjoyed a large budget surplus that set it far ahead of many in the region and boosted perceptions of its economic performance. Whilst, struggling against three tuff competitors in the region: Israel, Turkey and Iran.[8]

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[5] Science and Engineering Indicators 2012

6 Bureau of Citizenship and Immigration Services, Student and Exchange Visitor Information System database, special tabulations (2011).

[7] http://www.wipo.int/ipstats/en/statistics/country_profile/countries/sa.html

[8] Insight report: The Arab World Competitiveness Report 2013,May 2013, 2013 by the World Economic Forum and the European Bank for Reconstruction and Development (EBRD)

Table (1) Saudi Arabian Science &Technology challenges ,strengths & weakness					
	indicators[5]	Saudi Arabia score	World mean	Top score	KSA position
Strength	Availability of scientists and engineers Scientist & engineers / million habitant (2009)	47	1050	6309 Finland	Above average (35/144)
	FDI and technology transfer (2013)(out of 7)	5.5	4.9	6.4 Ireland	high (8/144)
	Gov't procurement of advanced tech products	4.8	8.5%	5.8 Qatar	Very High (5/144)
	Brian Drain (2013)	5.0	3.4	6.3 Switzerland	Above average (13/144)
	Capacity for innovation (2013)	3.9	3.8	6.0 Japan	Above average (29/142)
	Utility patents granted/million pop (2009)	0.2	2.2	311 Sweden	Above Average (40/144)
	Company spending on R&D	4.2	3.9	6.1 Switzerland	Above Average (23/144)
	Firm-level technology absorption	5.8	4.0	6.3 Sweden	High (20/144)
	Knowledge Economy Index (KEI) (2013) Jump 26 positions in 2013	5.96		Denmark 9.23	Above Average (50/145)
	Geographical competitive advantages Logistics, Suez canal Renewable energy exports Added value (2030)	60 billion US$	-	-	High potentials
Weakness	Tertiary education enrollment, gross%	36.8			Lower average (69/144)
	Imports as a percentage of GDP	28.8			Low (122/144)
	Women in labor force, ratio to men (2011)	0.24			Very Low (141/144)
	Restrictive labor regulations	24%			
	Inadequately educated workforce	16%			
	Inefficient government bureaucracy	9%			
	Insufficient capacity to innovate	6.6%			
	Inadequate supply of infrastructure	4.2%			

The desperate need for reform in Saudi Arabia includes social and cultural aspects, in addition to the economical reform which has emerged four years ago in 11 of 18 economies in MENA, by adopting a total of 22 business regulation reforms to improve the climate for doing business according to the latest Doing Business report (2011). The top reformers in the region were Saudi Arabia and Egypt which were among the 15 most active reformers in the last 5 years.

Now it's the turn for urban policies and planning reform for the concept of the public realm is Saudi cities and metropolitan regions, within its $400 billion public investment stimulus program.

[9] The Global Competitiveness Report 2012-2013 , 2013 World Economic Forum

To overcome the problematic challenges of inadequately educated workforce, inefficient government bureaucracy, Inadequate supply of infrastructure and insufficient capacity to innovate.

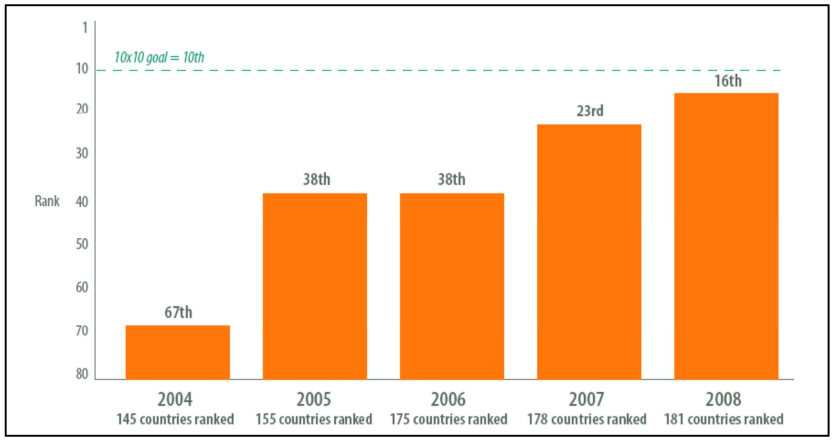

Figure 1. Saudi Arabia's overall ease of doing business ranking
Source: doing business 2005-2009,World Bank/IFC

1.3. Emerging models of urban development of knowledge hubs:

Innovation is a guiding principle and an active concept of research and development worldwide. But where does it live? Does it need a physical space and community to foster competition and productivity? How can innovation center influence the city social life, culture and economy? Is it better to but innovation centers in the city boundaries, or it should be integrated with the vibrant urban community of the city center?

Research and innovation-related activities play an important role in these processes. It has been shown that research, innovations inspired by R&D, and their various spin-off effects have a major beneficial effect on the regional economy.[9] But still, a big debate is occurring against the feasibility and the reliability of this concept for the economic growth and urbanism, especially for the developing regions. Moreover, as we know that creative city concept is still loosely understood from city planning point of view, despite the growing popularity of this paradigm in the area of urban policies. [10]

Figure 2.The role of Anchors in community revitalization: Strategic Framework
Source: Initiative for a Competitive Inner City (ICIC)"INNER CITY INSIGHTS ANCHOR INSTITUTIONS AND URBAN ECONOIC DEVELOPMENT:FROM COMMUNITY BENEFIT TO SHARED VALUE",2012,WWW.ICIC.ORG

The **Innovation District** concept plants the seed of a green high technology future: the diverse living spaces and lifestyle options create an attractive space for entrepreneurs to base their campuses.

In addition, university campuses and science parks have been built in urban peripheries all over the world and this has facilitated new city developments in many regions worldwide, at the same time they are causing the relative isolation of students and part of the academic communities, as well as unsustainable mobility patterns for teachers and other parts of those communities.

[10] Florida,Richard. **"The rise of the creative class: And how it's transforming work, leisure, community and everyday life"**. New York: Basic Books. 2002
[11] Landry, Charles and Franco Bianchini," **The Creative City**", London: Demos.2005

How far adequate and inclusive urban planning and design of science parks and "knowledge infrastructures" can help engaging people in the "social construction of technological systems" and, consequently, accelerate the modernization of emerging societies worldwide in quite diversified national and regional contexts? Does it make sense to discuss **"knowledge urbanism"**, as an emerging issue at a global scale?[11]

In this study, we can focus on two main typologies for the urban setting of innovation district as follows:

1.3.1. Model (A): Off-city campus model-KAUST

KAUST (King Abdullah University of Science and Technology) is an ambitious science and technology anchor focusing on postgraduate academic campus focusing on research and development in advanced scientific fields. It was selected to be located near Thowl city, 80 Km north of Jeddah. As been described as one of King Abdullah's dreams for spreading the culture of innovation within the Saudi community, KAUST was launched in 2009 with a huge budget of more than 10 Billion Saudi Riyals.

The concept of this campus design was inspired by the idea of the traditional American City-Campus, which has been adopted in many American and European Universities. However attractive and pure this idea may seem, thirty years after its widespread implementation it is evident that this type of university campus does not lead to a desirable socio-cultural and urban environment.

It is hampered by its isolated location, its mono-functional disposition and its remoteness from mixed urban structures.

KAUST is considered as one of the developed editions of campus design, relaying on some design and planning revisions generally aim at adding living quarters for students and staff, providing high-quality public transport and attracting commercial and cultural functions.

Unfortunately, this trend increased the risk of further isolation. The campus of KAUST , offers such a complete range of amenities for living, working, shopping and leisure and is so far removed from the city, that it is turning into an autonomous compound with all the characteristics of a gated community.

These suburbs are in fact the selfsame city which, like nineteenth-century urban expansions, has encircled and swallowed the university. Despite their flaws, the suburbs show the modern city's true appearance, which has virtually the same shape all over the world. This is where the greater part of the population lives and a major part of economic production takes place.[12]

Infect, the new model of KAUST didn't accomplish the expected distinction, compared with the outstanding infrastructure and up-to-date facilities and unlimited sources of fund and royal support.
due to the disappointing impact of local Saudi universities in regional development, and the raising call for rethinking the institutional integrity of Higher Education System in Saudi Arabia to assure diversity, while maintaining institutional integrity, which may take a period of two decades or more.

1.3.2. Model (B) :Old industrial areas- Science Park Amsterdam

While Science City in Zurich was a pre-existing campus on a beautiful site, the Science Park planned for Amsterdam's Watergraafsmeer, originally a polder, is an urban bathtub. Surrounded by water and dikes, a railway yard and Amsterdam's orbital motorway – all the elements of contemporary, closed spatial systems – it is self-contained. It is of little consequence for the rest of the city whether a residential district, an industrial area, a quarantine terrain or a university campus is located here. This

[12] M. Heitor, A. Blyth and T. Heitor ,**"Knowledge and cities by design: Revisiting the concept of university campuses and science parks in modern societies"** , A working paper and discussion note for establishing an international research network on "Designing Cities for Knowledge", [Cities4K], November, 2012

[13] Kees Christiaanse ," **Campus to City: Urban Design for Universities**" , 2011

shocking conclusion is alas no longer unusual. It applies to most suburban enclaves, except that these are generally not perceived as being so extreme because they have softer edges. On the one hand, there is something attractive about the idea that the city can consist of interchangeable 'patches'; on the other hand, the insularity, concentrated access and mono-functionality of such areas leads to a lack of social control, uneven daytime and nighttime rhythms, a lack of multiple relationships, an increase in mobility – in short to primitive, one-dimensional systems.[13]

1.4 success stories-Innovation District from old downtown renovation

In many recent cases during the last 5 years, huge investments were spent for refurbishing old industrial areas, abundant old city center or ports, massive reform for the infrastructure, radical changes in land uses strategies and other strategic decisions brought some cities back from the edge. Cities with different scales and sizes all over the world managed to achieve noticeable progress in regenerating their old center. Three noticeable success stories can be illustrated to conclude some learned lessons from. These three projects have some shared geographical and historical characteristics resembling the case of west-Bughdadia district:

1.4.1 The Fring-Cape town Innovation District:

The vision for this project has been to create 'the premier African environment for design, media and ICT innovation, creativity and entrepreneurship'. The project is heavily supported by the provincial government of the Western Cape's Department of Economic Development and Tourism through its Cape Catalyst Initiative, which has recognized the importance of various creative industry sectors for growing the provincial economy through relevant infrastructure.[14]

Figure 3.The Fring: Cape Town Innovation District 2014

Source: Guy Briggs,USPD ," **the fringe:DRAFT urban design framework**" www.guybriggs-uspd.com,2012

1.4.2 Barcelona 22@:

The 22@ district of innovation encompasses the former industrial neighbourhood of Poblenou, once a concentration of factories and industrial sites that served the entire region of Catalonia. It has gone through a very difficult period of socio-economic depression and marginalization, as well as territorial fragmentation before being revitalized into an innovative multi-clustered district. The reforming process of the area began in 2000 with the elaboration of a strategic plan to achieve a radical transformation of the Eastern part of Barcelona and to establish a new socio-economic identity.[15] The urban policy aims at creating in the next ten years (2020) a great

Figure 4.22@ Barcelona

Source: www.22barcelona.com

[14] Kees Christiaanse et al. (eds), Situation – KCAP Architects and Planners, Rotterdam 2005. Campus to City: Urban Design for Universities

[15] Guy Briggs,USPD ," the fringe: DRAFT urban design framework" www.guybriggs-uspd.com,2012

technological neighbourhood based on the innovative sectors (NTIC, Multimedia, Energy, Biotechnology, and Design) .It's still under construction, centred around Plaça de les Glòries Catalanes, is part of one of Europe's biggest urban regeneration schemes, begun during the 2000s and still ongoing, spanning 115 PLOTs or 198,26 ha.[16]

1.4.3 Resilien City: Boston innovation District

Resilien City seeks to set the vision for the future of Boston's Innovation District, a new neighborhood built on grey field and Brownfield sites that will provide residences and workplaces for over 300,000 people.

Figure 5.Boston Innovation District
Source: City of Boston. "The Strategy." Boston's Innovation District. June 28, 2010. Accessed June 23, 2011.

The project is heavily supported by the provincial government of the Western Cape's Department of Economic Development and Tourism through its Cape Catalyst Initiative, which has recognized the importance of various creative industry sectors for growing the provincial economy through relevant infrastructure.In the Innovation District, new models of office space, housing and culture will create value for the employers that locate there and enhance the ability of the employees who live and work nearby to develop groundbreaking research, technologies and services.

Boston's Innovation District is a 1,000 acre area along the South Boston Waterfront comprising the Fort Point Channel, Seaport Square and the Boston Marine Industrial Park. In FY11, city agencies will collaborate to facilitate early proof projects in the Innovation District.[17]

2. *Learned Lessons: Design for Space, Place and People*[18]

In order to explore the viability of establishing an innovation district Mechanism to focus on international partnerships for sustainable development, some Proposed Tasks for Knowledge Hubs Development will need to be undertaken[19]:

- An **integrated spatial planning** exercise which would allow for a sustainable mix of uses which is serving the various demands of the people who work, live and play here; better connected, quality space; integrated functioning.
- **Walk-ability**: No resident should be more than 5 minutes away from any basic good or service and as many activities as possible should be within easy walking distance of each other and public transport. The use of the car should be de-emphasized and pedestrian ways and green areas designed to attract pedestrians.

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[16] Delgado Ruiz M. (2007), **La ciudad mentirosa. Fraude y miseria del « modelo Barcelona**, La Piqueta, Madrid.

[17] National League of Cities," **Boston's Innovation District Cultivating a Culture of Entrepreneurship"**, 2012

[18] Initiative for a Competitive Inner City (ICIC)"INNER CITY INSIGHTS ANCHOR INSTITUTIONS AND URBAN ECONOIC DEVELOPMENT:FROM COMMUNITY BENEFIT TO SHARED VALUE",2012,WWW.ICIC.ORG

• **Connectivity**: Streets, pedestrian paths and bike paths should contribute to a system of fully connected routes to all destinations. Public spaces should be designed to encourage the attention and presence of people at all hours of the day and night.

• ***Mixed use buildings***, e.g. commercial spaces with apartments over them should be encouraged, as should densification. In line with developments elsewhere in the city, it should be a requirement that all new buildings should have a residential component integrated into their structure. This mix of uses catalyzes some locally inspired cultural components and creative industries, with the potential for releasing local uniqueness.

• A ***wide range of retail, commercial and entertainment options*** should be provided for – supermarkets, retail shops, bookshops, showrooms, restaurants, pavement cafes and coffee shops, galleries, businesses servicing the design industries operating within the precinct (repro houses, art materials), street markets, in order to form an active street frontages colonized by a vibrant mix of uses.

• A **strong emphasis on community, maintaining connections between people** with high density housing, parks, open spaces, community gathering centers, e.g. squares and plazas where spontaneous and casual interaction can take place, and a vibrant atmosphere created 24/7.

3. "Al-Faisal Innovation District": refurbishing the old downtown of Jeddah:

The reinvention of **Al-Faisal Innovation District** is the answer to that question- the re-branding efforts begins in exploring the historical norms of this great leader, offering business incentives and building on the municipal planning that sought to redefine the urban landscape.The goal is to look at the new master plan of the district in terms of its impact on the social context of the "campus" and its interaction with Social , environmental and economic goals.

During Spring semester 2013 in the urban design studio (6) course in the Architecture Department,Effat University ,our workshop teams considered potential scenarios and paths about the way the built environment interact with people to foster processes of social and economic integration, in a way to both preserve and **foster the sophistication necessary to King Faisal Historical Palace and the surrounding community of Jeddah city.**

3.1.The vision:

Starting from the idea of innovation district, a cross-disciplinary research team in Effat University, in collaboration of local government and privet sector bodies, went through a comprehensive feasibility study for renovating an old district within Jeddah City, Saudi Arabia. The main motivator for this market- based study was the royal family of King Faisal Bin-Abdul-Aziz, the former king of Saudi Arabia between 1964 till 1975.

the project main themes were inspired from the personal leadership of King Faisal Diplomacy, as a Ruler, state man, economist, political orientation, and social change maker(Female Education and TV and media).assembling his role in rescuing the country's finances and implementing a policy of modernization and reform, the project main objective is to re-refurbish the old district of West

Bughdadiah, which was one of the most vibrant and liveable areas within the city downtown in the last four decades.

Through this project, we aimed to gain a greater understanding of how innovation districts function, how they originate and what results they have achieved. Existing innovation districts, though still relatively new, may provide the Arabian cities with novel approaches for reinvigorating its cities and improving its national competitiveness, given both the existing range of industry clusters and the presence of higher education institutions in the region. **Through a fully integrated mixed-use development includes: Universities, housing, public space, entrepreneurs, business services, productive spaces, research, technology transfer centres, and incubator hubs**

3.2. Project Design Goals:

1. **To Facilitate Socio-Economic Growth**: Creating a social hub for interaction between religious, civic, cultural and commercial activities. Thus, the new centre of King Faisal Innovation District (KFID) will act as a catalyst for urban reform for the area.
2. **To Give Sense of Arrival**: Emphasizing and making the entrances to the project more distinct so it forms an external edge for buildings along main Madina Road. As people drive along the Madina Road, they will see a welcoming edge of buildings, form a distinguished boundary for the area and provide a proper sense of directionality.

Figure 6. King FAISAL Historical Palace, Al-Bughdadia –Jeddah, KSA

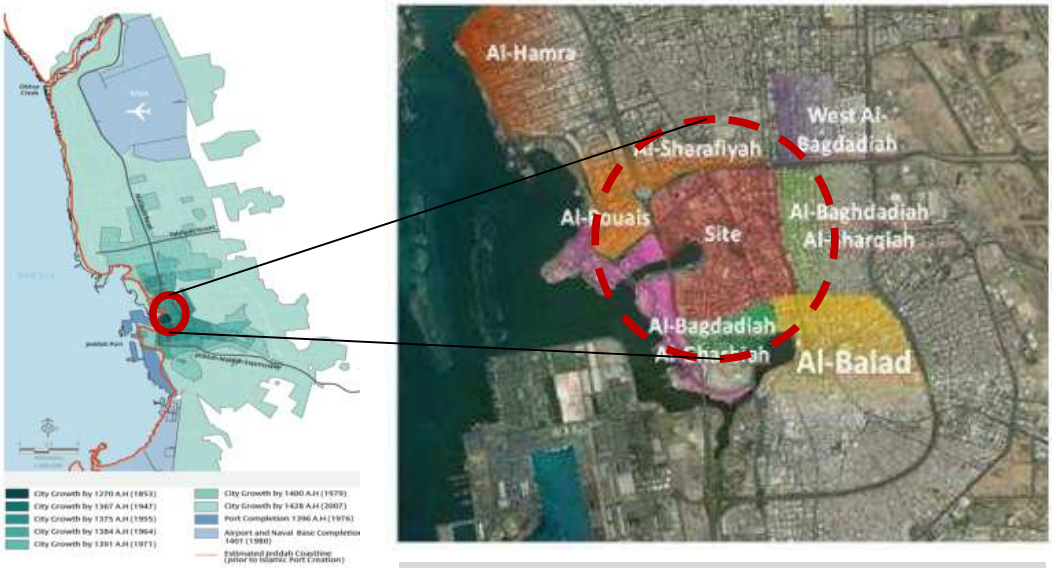


Figure 7.Al-Bughdadai District-Boundaries
Source: Effat University Students work,ARCH 306-SPRING 2013

3. **To adopt Sustainable design strategies**: Involving key strategies and processes for adaptive re-use, and the redevelopment of existing site facilities.
4. **To Generate a Sense of Identity**: Creating a monumental architecture by enhancing and expressing the historic significance of the site reflecting the transition of time from the past to the future, and progressive development in the Kingdom. This includes creating a distinguished presence of the palace as a major focal point for the region.
5. **Investing the potential of establishing some anchors for a balanced urban development of Jeddah City**, North- South Balance Driven by City or national government for a new standard of urban planning.
6. Retention of historical fabric combined with contemporary developments, sustained with New, sustainable infrastructure.

3.3. Project study area:

Jeddah is the second largest Saudi city of population after Riyadh, with more than 3.5 million habitants. The city is located in the middle of the eastern coast of the Red Sea. It is the economic and tourism capital of the Kingdom of Saudi Arabia.The project is located in the district of West Bughdadiah, near the old historical centre of Jeddah "Al-Balad" district. This district is a transitional area between the old city boundaries and the new expansions of Jeddah during the 60s and 70s of last century. It used to be luxurious suburb of the city till the end of the 80s , Most of the wealthy families in Jeddah lived in the area around the palace of King Faisal, who dwelt in that region during his reign as king of the Kingdom of Saudi Arabia till 1975.

The area is surrounded by a group of major arterials linking the linear city of Jeddah all along from the southern old centre to the new expansions of the city in the north.

3.4. Historical Background:

Al-Bughdadiya is an extension of ancient neighborhood of Jeddah which came out of the Jeddah wall and led to the demolition of the wall to join these areas together. The western part of the district which is adjacent to the Sea is the newest part, which is overlooking to Al-Arbaeen Lake.

In the late seventies Al-Bughdadiyd had twenty houses only. And then it began to expand until today it became more than four square kilometres, which is divided by Al-Madinah Road(as the main central arterial dividing the city into two halves).so, it became known of its two parts, what is located in the west of the road called the western Baghdadiya district, and the eastern Bagdhadiyah district, which is the old part.

Most of the western parts of Al-Baghdadiyah District are marshes and marine areas covering a large part of it, but after so many years all of these marshes got destroyed and replaced with cement blocks and high-rise buildings that make up the modern face of the district.

3.5. Existing situation analysis:

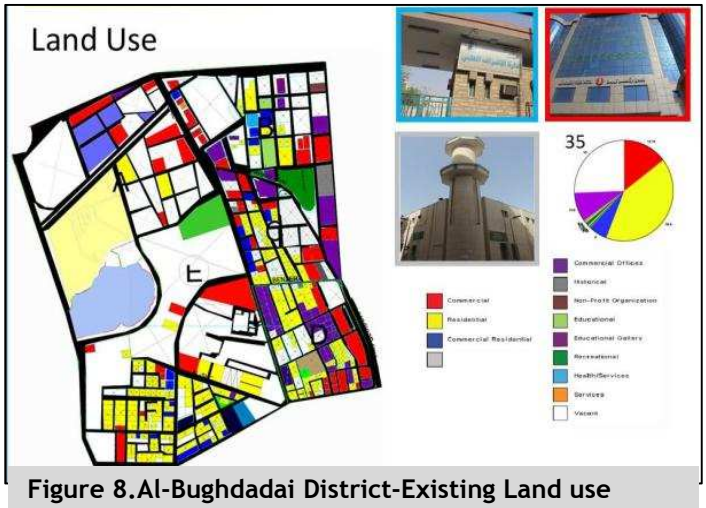


Figure 8.Al-Bughdadai District-Existing Land use
Source: Effat University Students work, ARCH 306-SPRING 2013

Currently, due to the rapid expansion of the city towards the north, Al-Bughdadiah district can be considered as an abundant area, because of the massive immigration of its original residents to the wealthy neighbourhoods in the northern, which enjoy more advanced facilities and infrastructure. Most of district's old features has disappear, and lost its social cohesion and vibrant commercial activities unlike nowadays. Security turned to be a critical issue in this area today.

35% of the site's area is vacant land, while 31% of the project's buildings are in abundant or deteriorating buildings in low quality, which is a good row material for planner allowing for radical reform of the site's land use and infrastructure and street network.

Figure 9.Al-Bughdadai District-historical images
Source: Effat University Students work, ARCH 306-SPRING 2013

4.6. SWOT analysis:

	Strengths	weakness	opportunities	threats
Socio-economical	-Area is becoming multi-cultural community with Historical Value. -Minimarkets located in three main roads. The existence of the ministry of higher education. -Touristic buildings of the City: King Faisal Palace is an important point of attraction of tourists. -Mixed-use commercial and business. -Cultural Activities: One Gallery " Safiya Binzagr . -Availability of water and electricity. -The existence of the Italian council building adds a historical value to the area.	-sewage centre weakens land and area quality -No service centres (Schools, Hospitals, Supermarkets, and public service facilities) -Some essential facilities like civil defence healthcare and hospitals, and educational facilities are missing. -No tourist attraction, no pharmacies, clinics, libraries, supermarkets and restaurants. -Limited retail shops for either cloth or food.	-The Area can be developed as the centre of activities and services in for the whole transitional region between the old city and the new expansions of northern Jeddah. -The area is overlooking the Lagoon and it has good presence as a waterfront development, which can act as a recreational magnet and touristic area due to its good view. -The land value is expected to increase, due to the transition of the water treatment plant to the southern edge of the city, will enrich the opportunity of strong investments in that area.	-No safety and security services, sense there is only one police station on the all area.
Urban Physical	-Office buildings are located next to each other mostly overlooking important streets. -Many vacant lands to be developed -Three major roads in Jeddah are crossing through the district. -Some new high quality buildings. -Aesthetically pleasing streetscape in certain areas. - the style of buildings reflect the heritage and history of old Jeddah.	-Rational parking in vacant lands\ no arrangement of parking lots. -No public transportation system increases congestion. -Signs of local food market makes the elevation of the street looks bad. -Main streets are crowded during rush hours. -Lack of parks and green areas (shades, trees, open spaces, gathering spaces. -Lack of public toilets.	-A lot of commercial buildings are under construction, with will increase commercial growth in the area. -the history of the area is appositive potential for the revival of the social and cultural activities of it. -The high percentage of vacant land 35% can be easily used to build all what the area is lacking (facilities, pedestrian network, open spaces). - Some of old buildings can be preserved, as historical buildings. -New infrastructure under construction.	High percentage of low quality roads caused traffic and accidents. Lack of pedestrian walk ways forced inhabitants to use the streets and high risks of accident arise.
Environmental	Balanced heights of buildings to allow a good amount of air circulation	Lack of waste management for the area's garbage.	-Adding recycling\ waste management system= less visual pollution' utilization many vacant lands to be developed. -Removing the water treatment centre will help to clean the environment. Infrastructure enhancement.	-Infrastructure needs further enhancement. -Most vacant lands used for Garbage affecting the environment which will affect people's health. -Sewage centre affect the overall environment of the area and its health causing vacancy on many lands.

The multi-layered analysis of the existing situation led to dividing the site into five character zones, each has its own theme and harmonious urban, economical and social ingredients. Some recommendations were proposed for the suitable program of intervention of each character zone.

Zone 1-the historical area: including King Faisal Palace and some other historical buildings.

Zone 2-the waterfront: This is mostly a vacant area with unplanned plots.

Zone 3-the business area: a group of high and mid-rise office building hosting business firms, banks and governmental buildings.

Zone 4-commercial zone: a commercial super block including a variety of retail outlets and malls, with some low quality residential buildings.

Zone 5- Residential Neighbourhood

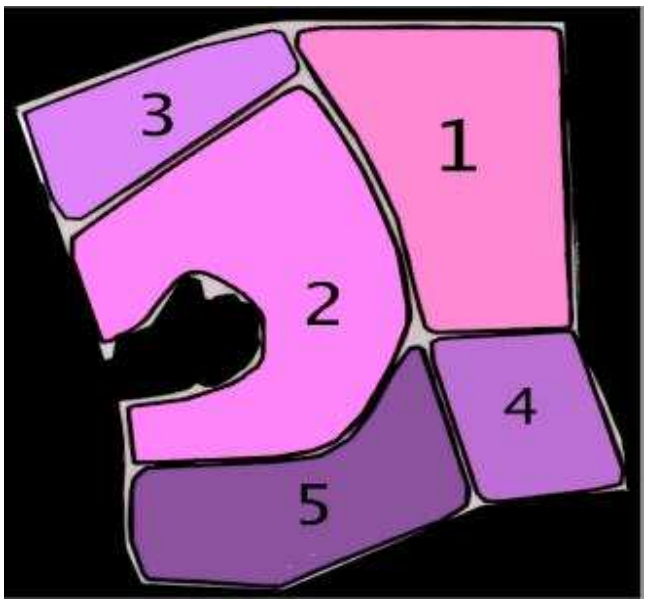


Figure 10.Al-Bughdadai District-character areas
Source: Effat University Students work, ARCH 306-SPRING 2013

4. The plan:

Four groups of undergraduate students went through proposing different visions and scenarios for the project inspired from the theme of "Innovation District", some scenarios focused on individual aspects of urban development (economical, environmental or social).Four proposals raised.

4.1. Proposed Scenarios:

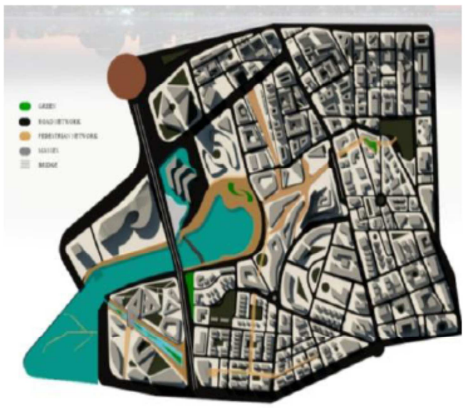
	Socio-cultural	Environmental & innovative
Revolutionary approach	 Group A:excavating the genes of Social Cohesion	 Group B:Jeddah Research HUB
Conservative approach	 Group D: Reviving the History Of West-Bughdadia	 Group F: Al-Faisal Islamic Node

Figure 11.West Al-Bughdadai Innovation District-Proposed scenarios
Source: Effat University Students work, ARCH 306-SPRING 2013

4.1.1. Research and Development Hub:

The idea of transferring west Bughdadiah district to be a regional hub for research and developing within the city centre was inspired from the Science Park of Amsterdam and Boston's Resilien City or Innovation District.

The site is surrounded by three major HEI in Jeddah: King Abdul-Aziz University, which is the largest academic campus in the city, Effat University and Dar-Al Hikma University. These institutions can be connected with the site through one of the major spins of the city: King Abdullah Road, which facilitates the connection between the emerging research HUB and these academic institutions.

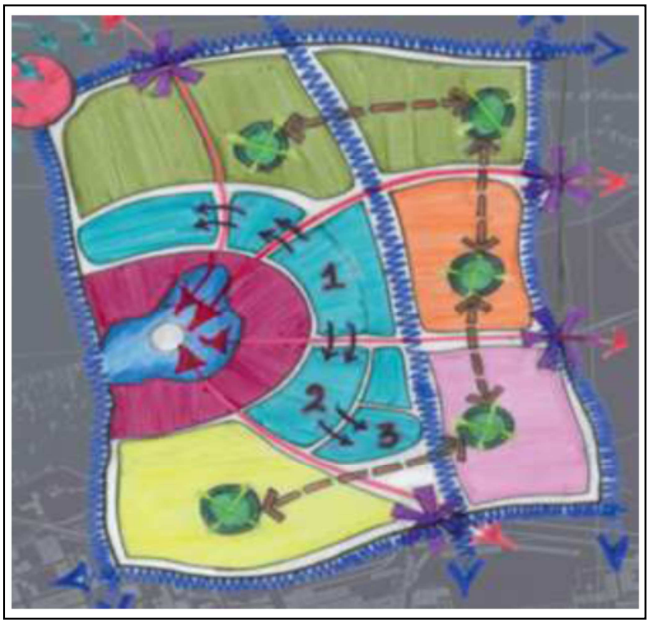


Figure 12.West Al-Bughdadai Innovation District-Proposed scenario A
Source: Effat University Students work, ARCH 306-SPRING 2013

This option In its structuralist urban planning concept, depend on locating the research centres ,open plans of research office spaces , various faculties, lecture halls and laboratories to be arranged like a central ring along a radial spine, surrounding the waterfront. In the middle of the spine is an 'agora' which provides a wide range of collective facilities. Also, this central hub was designed to be fed by four major pedestrian corridors. Linking between the centre and the four themed gates in the peripheries:

- Research & Development Axe
- Historical Axe, from King Faisal Palace
- Commercial Axe,
- And social axe for the local community

4.1.2. City anchor for socio-cultural activities:

The second group's idea was influenced by the Dick Dusseldorp statement "The time is not far off when companies will have to justify their worth to society with greater emphasis being placed on environmental and social impact than straight economics." This has been acknowledged to be the initiating idea for developing Darling Quarter project, which is considered one of Sydney's most popular public spaces.

Darling Quarter is where the western edge of the city and the park meet and is celebrated in a series of defined public spaces, including a pedestrian boulevard, parklands, gateway, children's playground, and activated edges lined with cafes and restaurants. It is a place for everyone, for city workers at lunchtime and in the evenings, families, and children, the young and old, visitors and locals.

Based on this approach, this group emphasised on the idea restoring the strong social bonds of the local community of the regions habitants and the extended population of the whole city of Jeddah. They went through re-visiting the concept of Public Realm to be adopted in way that matches the local norms and traditions of the Saudi community. Also this scheme were concerned by the climatic constrains of high humidity and hot weather almost during the whole year.

Basically, this group intended to create a dynamic social and cultural centre full of open space activities related to art, creative industries, museums , reading, playing and chatting to enhance the social interaction and seeding the common culture of dialogue, all Mixed sympathetically with recreational flavour.

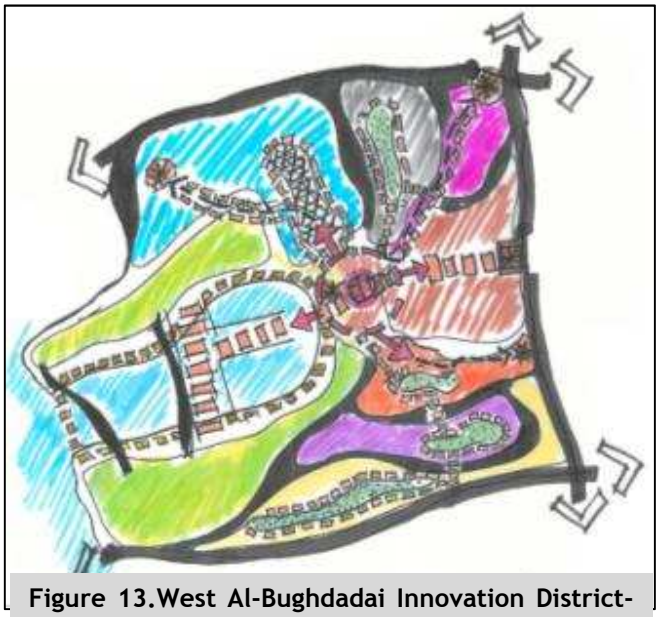


Figure 13.West Al-Bughdadai Innovation District-Proposed scenario B

Source: Effat University Students work, ARCH 306-SPRING 2013

4.1.3. Revival of historical values of west-Bughdadia::

Jeddah is the main gate for hosting more than 5 million pilgrims and annually, which is considered the starting point for their religious and sacramental journey to the Two Holy Mosques in Mecca and Medina. This team inspired their concept from the restoration project of old Beirut centre "Solidaire". Reviving the historical values of the neighborhood and focusing on turning the project to be an open museum .as a destination for Muslim visitors (pilgrims) and non Muslims, the project can be recognized as a multi-cultural spot hosting many social and cultural events and one of the major touristic attraction points in the city.

Figure 14.West Al-Bughdadai Innovation District-Proposed scenario C-resembling old Beirut historical center "Solidaire"

Source: Effat University Students work, ARCH 306-SPRING 2013

4.1.4. Al-Faisal Islamic-innovation District:

This group went through studying the history of King Faisal. The design scheme considered King Faisal Palace as the starting point of development for the whole district. The design program will reflect five fields of achievement that King Faisal has been devoted as a founder and pioneer to plant in the Saudi community: art & media, Sports, Islamic economy, Female Education and medicine.

The design intended to create five nodes being themed with these five filed will act as centers of five distinguished zones, focusing on each field: sports city, art and media zone, Islamic financial zone, educational zone and medical zone.

Figure 15.West Al-Bughdadai Innovation District-Proposed scenario D

Source: Effat University Students work, ARCH 306-SPRING 2013

4.2. Design schemes evaluation:

The design studio jury committee made evaluation for each group's work based on the concluded design criteria from the previous case studies.

According to the evaluation matrix and the critique of all design scenarios, the jury has selected the proposed scheme of group D: the reviving the historical norms of West Bughdadia. As the most integral approach of design among all proposed scenarios, considering the principles of design for:

- Design Principles about PLACE: connection, enhancement, endurance and diversity.
- Design principles about PEOPLE: comfortable, Vibrant, Safe and Walk able.

Still, the proposed scheme is in the processing stage of official approval from the stakeholders and the decision makers of the city.

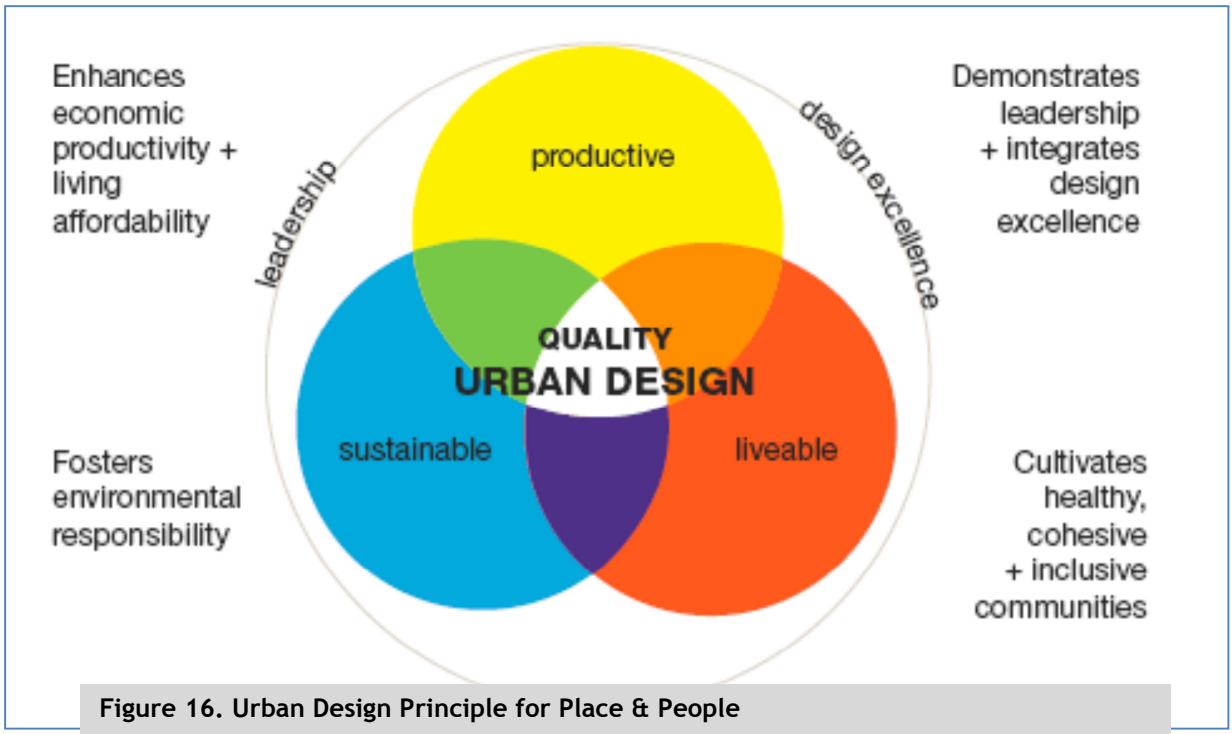
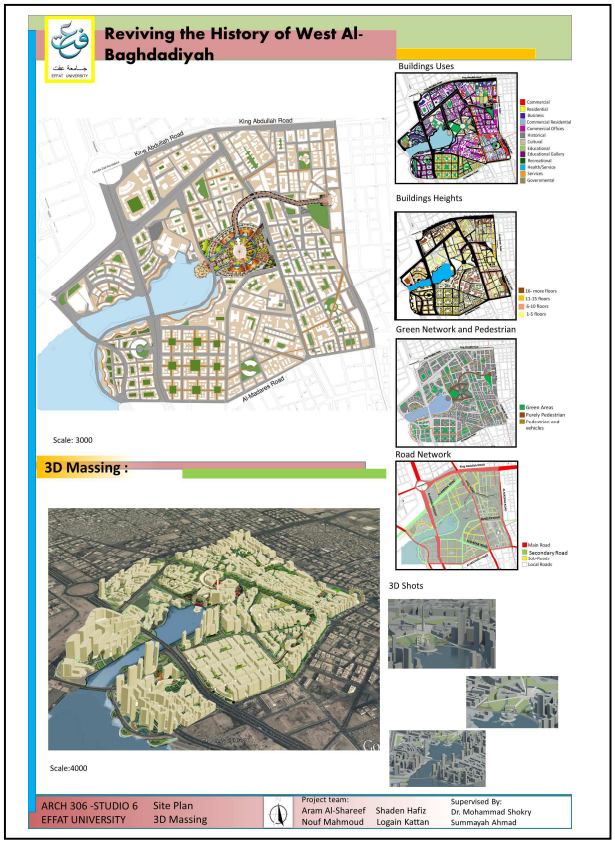


Figure 16. Urban Design Principle for Place & People

Source: **CREATING PLACES FOR PEOPLE** AN **URBAN DESIGN PROTOCOL** FOR **AUSTRALIAN CITIES, National Urban Policy. www.majorcities.gov.au**

Approach	*Design principle*	*weight*
Design principles about place: productivity + sustainability	Enhancing : Enhances local economy, environment + community.	***15%***
	Connected : Connects physically + socially	***10%***
	Diverse : Diversity of options + experiences	***20%***
	Enduring : Sustainable, enduring + resilient	***7.5%***
Design principles about people: livability	Comfortable: Comfortable + welcoming	***10%***
	Vibrant: Vibrant, with people around	***15%***
	Safe: Feels safe	***7.5%***
	Walkable: Enjoyable + easy to walk + bicycle around	***15%***



5. Concluding Remarks

As a conclusion, and after exploring different thoughts, theories, visions and practical case studies, this paper presented some prober answers for the major raised questions in a sequentially structured approach to reach some scenarios for developing the concept of inner-city Innovation District within the Arab region.

This research concluded also that the models of Innovation District design principles which are suitable enough to be applied in Al-Faisal Innovation District's case. But still, it should be further studied from the perspective of social equity and sustainable development for the case of the Saudi community.

Therefore, this research fetched in some emerging success stories, like Barcelona 22@ and the Fring of Cape Town innovation district, which has the same characteristics of Al-Bughdadiah District in Jeddah.

Also, it has been concluded that the development of higher education institute within the city urban context is expected to encourage spreading the culture of innovation and creativity within a sustainable framework for both developed and developing cities and nations. Hence, locales with highly interlinked higher education institutes are expected to have enhanced levels of wealth creation and job generation for the inner city inhabitants.

Although still, many authors feel that this thesis has not been empirically tested, this model put forward a link between a concentration of human capital and economic growth at the level of city planning, taking into account the level of education as a measure of human capital .

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