JEDDAH'S URBAN REGENERATION FOR DEMOLISHED NEIGHBORHOODS

Abdulrahman Alaqili
Altınbaş University

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Abstract: Urban regeneration has emerged as a vital strategy to address the environmental vulnerabilities, socioeconomic inequalities, and historic heritage preservation needs in rapidly urbanizing cities. In Jeddah, Saudi Arabia, recurrent flooding, inadequate infrastructure, and socio-economic disparities pose significant challenges to sustainable urban growth. This research investigates urban regeneration efforts with a focus on flood resilience, social inclusivity, and sustainability, emphasizing the historic district of Al-Balad and recently demolished urban areas as primary case studies. Utilizing a mixed-methods approach, this study integrates qualitative interviews, quantitative surveys, and geospatial analysis to evaluate urban renewal initiatives comprehensively. The results indicate that although al-Balad's strategies for cultural heritage effectively increase cultural tourism and economic revitalization, significant gaps in achieving socio-economic justice, infrastructure resilience and affordable housing. Improvements of infrastructure in rebuilt zones have some improved flood resistance, but remain fragmented, lack systemic integration. The study emphasizes the critical role of participating urban planning, green infrastructure and fair housing policy to formulate a comprehensive framework for Jeddah's sustainable and inclusive urban future.

Keywords: Urban Regeneration, Flood Resilience, Sustainability, Inclusivity, Heritage Preservation, Smart Urban Planning, Jeddah.

Аннотация: Городская регенерация стала важной стратегией для решения экологических уязвимостей, социально-экономического неравенства и сохранения исторического наследия в быстро урбанизирующихся городах. В Джидде, Саудовская Аравия, повторяющиеся наводнения, недостаточная инфраструктура и социально-экономические разрывы создают серьезные препятствия для устойчивого городского развития. В данном исследовании рассматриваются усилия по регенерации города с акцентом на устойчивость к наводнениям, социальную инклюзивность и устойчивость, с особым вниманием к историческому району Аль-Балад и недавно снесённым городским районам в качестве основных кейсов. Используя смешанный метод, исследование интегрирует качественные интервью, количественные опросы и геопространственный анализ для комплексной оценки инициатив по обновлению городской среды. Результаты показывают, что несмотря на то, что стратегии Аль-Балад по сохранению культурного наследия эффективно увеличивают культурный туризм и экономическое возрождение, существуют значительные пробелы в достижении социально-экономической справедливости, устойчивости инфраструктуры и доступного жилья. Улучшения инфраструктуры в восстановленных зонах повысили устойчивость к наводнениям, но остаются фрагментарными и не имеют системной интеграции. Исследование подчеркивает важную роль участия в градостроительстве, зеленой инфраструктуры и справедливой жилищной политики для разработки комплексной стратегии устойчивого и инклюзивного городского будущего Джидды.

Ключевые слова: городская регенерация, устойчивость к наводнениям, устойчивость, инклюзивность, сохранение наследия, умное градостроительство, Джидда.

Annotatsiya: Shaharni qayta tiklash tez sur’atlarda rivojlanayotgan shaharlarning atrof-muhit zaifliklari, ijtimoiy-iqtisodiy tengsizliklar va tarixiy merosni saqlash ehtiyojlarini hal qilishda muhim strategiya sifatida paydo bo‘ldi. Saudiya Arabistonining Jidda shahrida takroriy toshqinlar, yetarli infratuzilmaning yo‘qligi va ijtimoiy-iqtisodiy tafovutlar barqaror shahar o‘sishiga jiddiy to‘siqlar yaratmoqda. Ushbu tadqiqot shaharni qayta tiklash bo‘yicha sa’y-harakatlarni, xususan, toshqinga chidamlilik, ijtimoiy inklyuzivlik va barqarorlikka urg‘u berib, tarixiy Al-Balad tumani va yaqinda buzilgan shahar hududlarini asosiy tadqiqot ob’ektlari sifatida o‘rganadi. Aralash metodologiya qo‘llanilib, sifatli intervyular, miqdoriy so‘rovlar va geomakondagi tahlillar yordamida shaharni yangilash tashabbuslari kompleks baholanadi. Natijalar shuni ko‘rsatadiki, Al-Baladning madaniy merosni saqlash strategiyalari madaniy turizm va iqtisodiy tiklanishni samarali oshirsa-da, ijtimoiy-iqtisodiy adolat, infratuzilma chidamliligi va arzon uy-joy masalalarida sezilarli bo‘shliqlar mavjud. Qayta qurilgan hududlardagi infratuzilma yaxshilanishi ba’zi toshqinlarga chidamlilikni oshirgan bo‘lsa-da, tizimli integratsiyadan mahrum va parchalanib qolmoqda. Tadqiqot ishtirokchilikka asoslangan shahar rejalashtirish, yashil infratuzilma va adolatli uy-joy siyosatining muhimligini ta’kidlaydi va Jidda shahrining barqaror va inklyuziv kelajagi uchun kompleks ramka yaratishni taklif qiladi.

Kalit so‘zlar: Shaharni qayta tiklash, toshqinga chidamlilik, barqarorlik, inklyuzivlik, merosni saqlash, aqlli shahar rejalashtirish, Jidda.

Introduction

Urban regeneration constitutes a basic urban development strategy worldwide, and aims to revive aggravated urban environments by strengthening economic viability, social inclusion, environmental security and conservation of inheritance. With cities globally towards intensifying urbanization pressure, environmental impairment and social inequalities, integrated urban regeneration frameworks have become essential for sustainable development (Roberts & Sykes, 2000). Jeddah, a prominent coastal town on Saudi Arabia's western edge, exemplifies these complex challenges due to rapid population growth, recurrent catastrophic floods, aging infrastructure and significant socio-economic differences (Youssef et al., 2016; Vincent, 2003) (Fig. 1). Over the past few decades, Jeddah has experienced rapid urban expansion run by Saudi - Arabia's vision 2030, seeking economic diversification, modernization of infrastructure and improved viability. Nevertheless, this urban growth dynamics have aggravated vulnerabilities, especially in flooding, infrastructural deficits and conservation of cultural heritage.

Jeddah's flood incidents in 2009 and 2011 revealed significant weaknesses in the city's overwater control systems and highlighted the critical need for robust urban resilience strategies (Belhaj Ali & Ameur, 2018; Dano, 2020). Consequently, the city's historical district, al-Balad, recognized by UNESCO as a World Heritage Site, along with other recently cracked urban zones, has become focal points for innovative urban regeneration strategies that include international best practice and local historical and cultural considerations (Hamouié, 2020; Merrick, 2024).

Despite efforts aimed at urban renewal, it remains that significant concerns about the displacement of residents, socio -economic segregation, insufficient infrastructure and unsustainable development practices. For example, regeneration activities in al-Balad have contributed to increased tourism and inheritance of inheritance, but at the same time have aroused concern for rising property prices and the offset of residents with lower income (Hamouié, 2020; Merrick, 2024). Conversely, recently rebuilt urban areas provides an opportunity to use progressive and comprehensive regeneration frameworks that emphasize flood resistance, social justice and sustainable urban form (González & Fiorentino, 2021).

This study thus aims to evaluate the effectiveness of urban regeneration efforts in Jeddah by addressing the following research questions:

- Has urban regeneration in Al-Balad successfully addressed challenges related to heritage preservation, infrastructure resilience, and community well-being?
- To what extent is Jeddah’s infrastructure prepared for continued urbanization, particularly in terms of flood resilience and sustainable growth?

- Are residents of Al-Balad and other redeveloped areas ready and willing to adapt socially, culturally, and economically to ongoing urbanization?
- How can this research contribute to broader discussions and frameworks on sustainable and inclusive urban regeneration?

Through an integrated mixed-methods approach, this research will provide insights into best practices and outline a comprehensive urban regeneration framework tailored specifically for Jeddah's urban context.

Literature Review

Conceptual Foundations of Urban Regeneration

Urban regeneration is defined as the extensive revitalization of urban areas that experience economic stagnation, social fragmentation and environmental impairment (Roberts & Sykes, 2000). Historically, the regeneration efforts focused primarily on physical remodeling; However, at the same time regeneration is increasingly adopting a triple-bottom-line model that emphasizes social justice, economic sustainability and environmental responsibility (Campbell, 1996). Modern regeneration frameworks are advocating the development of mixed use, green infrastructure, improved public spaces, mobility improvements and participating community engagement to achieve sustainable urban environments.

Figure 2: Restored traditional Hijazi residence in Al-Balad, Jeddah, featuring distinctive green mashrabiyas and coral stone construction

Heritage Preservation in Regeneration Projects

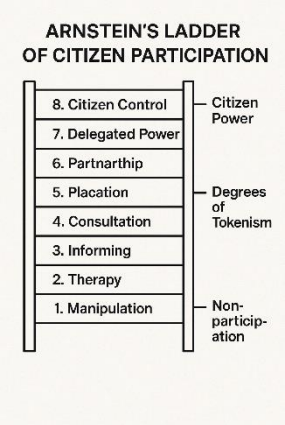
The preservation of urban inheritance has become a key element in urban regeneration strategies, especially in cultural rich contexts. Al-Balad exemplifies such efforts, combining the preservation of inheritance with urban revitalization through adaptive reuse of historical structures, tourist-driven development and maintenance of cultural continuity (Hamouié, 2020; Merrick, 2024) (Fig 2.).

International examples such as Barcelona's El Raval district and Singapores Chinatown illustrate the economic and social benefits of inheritance regeneration, although they also emphasize the risk of gentrification and socio-economic displacement (Casellas, 2009; Yuen, 2005) (Fig. 3). Conservation thus requires balancing historical conservation with socio -economic inclusion, and emphasizes local engagement and affordability (Avrami et al., 2019; Pendlebury et al., 2004).

Figure 3: Historical and contemporary urban plans of Barcelona, illustrating the evolution of the city's spatial organization and planning frameworks

Environmental Sustainability and Flood Resilience

Urban environmental sustainability has increasingly become a priority in urban planning, especially in flood -exposed regions. For Jeddah, Flash Flooding represents a recurrent environmental threat exacerbated by inadequate urban drainage, rapid urban spray and inadequate green infrastructure (Belhaj Ali & Ameur, 2018; Youssef et al., 2016). Sustainable approaches to urban flood management, such as nature -based solutions, including permeable asphalting, Bioswales, flooded urban parks and overwater retention systems, have proved effective internationally (González & Fiorentino, 2021; Hoang & Fenner, 2016). GIS-based spatial analysis and hydrological mapping improves further urban planning efficiency by identifying high-risk iconons and directing resilient infrastructure development (GIES, 2018).



Social Inclusivity and Community Engagement

Social inclusion is still a critical determinant for successful outcomes of urban regeneration. Arnstein's (1969) participation ladder provides a basic model for evaluating the citizens involvement, which indicates the importance of strengthening societies through meaningful consultation and decision -making opportunities (Fig. 4). Fair housing policies, housing communities with mixed income and economic government initiatives are instrumental in preventing socio -economic displacement and promoting continuous urban environments

Figure 4: Arnstein's Ladder of Citizen Participation, illustrating the hierarchy of public involvement in planning processes

(Dempsey et al., 2012; Furlan et al., 2020). Social engagement in regeneration initiatives ensures that local needs are prioritized, which improves long-term sustainability and resilience (Yang et al., 2019; Ortega-Ferndez et al., 2020).

Methodology

Figure 5: Map of Jeddah's urban renewal strategy highlighting Al-Balad and the fully or partly demolished districts

Study Location and Design

This study was conducted in Jeddah, Saudi Arabia, especially with a focus on two critical areas: the historical district al-Balad and several recently cracked and remodeled zones (Fig. 5). Data collection was performed from March to October 2023. Jeddah was chosen because of his recurrent environmental challenges, especially floods, significant cultural heritage and ongoing urban regeneration initiatives that provide valuable insight into the integration of sustainability, inclusion and resilience (Belhaj Ali & Ameur, 2018; Hamouié, 2020).

Research Design

A convergently mixed method design was selected and combined qualitative and quantitative approaches to enable a comprehensive understanding of the effect of urban regeneration. This approach also allowed the exploration of objective infrastructural calculations and subjective social perceptions, and facilitates multidimensional data interpretation (Creswell & Plano Clark, 2018).

Population, Sample, and Sampling Methods

The population for the study included local residents, urban planners, architects, decision makers and environmental experts involved in renewal projects. Stratified random sampling was used to select residents (n = 150), which ensured representative demographic diversity in terms of income, term and location.

Data Collection

Structured surveys were distributed both in person and online among residents to quantify perceptions of quality of life, infrastructure satisfaction, and flood resilience. Survey responses utilized a Likert scale (1–5) to gauge attitudes quantitatively. Semi-structured interviews were

conducted with experts to explore deeper insights into regeneration practices, lasting between 30–60 minutes. Geospatial analysis using GIS evaluated urban growth patterns, land-use changes, and flood-prone zones using spatial layers provided by the Saudi General Authority for Survey and Geospatial Information.

Data Analysis Techniques

Quantitative data from surveys were analyzed using descriptive and inferential statistics, including Chi-square tests, t-tests, and regression analysis, performed using SPSS. Qualitative data from interviews underwent thematic coding via NVivo, while GIS spatial analysis provided geospatial visualizations of regeneration impacts and flood risk areas.

Ethical Considerations

Ethical approval was secured from the relevant ethical review board, ensuring informed consent, voluntary participation, anonymity, and confidentiality throughout data collection and analysis phases.

Results

Quantitative Findings

Survey responses revealed statistically significant differences between Al-Balad residents and those from redeveloped zones in terms of satisfaction with infrastructure (Al-Balad mean = 3.2; Redeveloped zones mean = 3.8; $p = 0.016$) and perceived flood safety (Al-Balad mean = 2.7; Redeveloped zones mean = 3.5; $p = 0.003$).

However, there were no significant differences regarding community inclusion ($p = 0.087$) and housing affordability ($p = 0.210$), both rated relatively low (mean ~2.1–2.9) across both groups.

Geospatial Analysis

GIS spatial analysis identified that approximately 58% of the redeveloped urban zones overlapped with identified flood-prone (wadi) areas, yet fewer than 25% incorporated adequate green infrastructure such as permeable paving or bioswales, exposing continued flood vulnerabilities despite infrastructural improvements.

Discussion

Heritage Preservation and Urban Identity

Findings confirmed Al-Balad's regeneration successfully balanced heritage preservation and economic revitalization through tourism and cultural initiatives (Hamouié, 2020; Merrick, 2024). However, relatively lower scores in community inclusivity and housing affordability align with the literature's concerns about gentrification and displacement pressures resulting from predominantly commercial-oriented regeneration strategies (Al-Hathloul & Edadan, 2019). Thus, while heritage preservation was effectively achieved, broader socio-economic integration remains insufficient.

Flood Resilience and Infrastructure Preparedness

Survey results indicated significantly improved perceptions of flood resilience in redeveloped zones compared to Al-Balad, likely due to recent stormwater management enhancements post-flooding events in 2009 and 2011 (Belhaj Ali & Ameur, 2018; Dano, 2020). However, GIS findings highlighted ongoing systemic vulnerabilities due to the fragmented implementation of green infrastructure.

This partial progress underscores the necessity of an integrated flood management strategy, including comprehensive GIS-based flood zoning, nature-based solutions, and green infrastructure aligned with global best practices from cities like Dubai (González & Fiorentino, 2021; Hoang & Fenner, 2016).

Social Inclusivity and Community Participation

Despite infrastructure advancements, the absence of statistically significant differences in community inclusivity scores between Al-Balad and redeveloped areas suggests that current regeneration practices do not sufficiently prioritize participatory planning. Qualitative feedback from older residents about cultural alienation and displacement concerns reinforced Arnstein's (1969) critique of minimal participatory practices, highlighting the critical need for inclusive

regeneration frameworks (Dempsey et al., 2012; Furlan et al., 2020). Greater emphasis on mixed-income housing, community-centered planning, and economic empowerment initiatives could substantially enhance urban regeneration outcomes.

Housing Affordability and Equitable Development

Low reasonable ranking in both al-Balad and rebuilt zones indicated ongoing struggle with economic inclusion and fair housing access. Despite step-by-step improvements in urban infrastructure and security, the persistent lack of affordable housing strategies directly contributes to socio-economic differences, and reinforces the need for strict housing for mixed income, affordable housing mandates and public-private partnerships (Al-Hathloul & Edadan, 2019; Yang et al.

Limitations and Future Research

The limitations of this study include limited access to detailed flood infrastructure data, potential examination distribution benefits and limited generalizability beyond Jeddah's specific urban context. Future research may benefit from longitudinal studies assessing long -term outcomes of implemented regeneration strategies, broader comparative analyzes of several cities in the Middle East and deeper exploration of participating management mechanisms.

Case Studies

Dubai: A Model for Smart, Sustainable, and Inclusive Urbanism

Dubai represents a global goal for integrating technological innovation, environmental protection and social inclusion in urban regeneration. Dubai's approach includes adaptive infrastructure control that uses AI-powered flood control systems, permeable urban surfaces and sustainable refrigeration strategies such as green roofs and shaded walking corridors (González & Fiorentino, 2021). The city's housing policy for mixed income mandate includes the inclusion of regulation, ensures fair access to housing and prevents socio -economic displacement (Dempsey et al., 2012). In addition, Dubai's pedestrian-centric urban design, transit-oriented development and multimodal transport networks provide effective mobility, reducing the dependence on private vehicles and promotes lively public spaces (Cuguroullo et al., 2024; Gehl, 2010). These practices provide valuable insights for Jeddah's urban regeneration, especially when it comes to integrated flood restriction, fair housing and sustainable mobility strategies.

Al-Balad, Jeddah: A Heritage-led Regeneration Approach

Al-Balad, Jeddah's historical district, demonstrates effective inheritance urban regeneration, and integrates the preservation of cultural heritage with modern urban revitalization. Regeneration efforts focused on adaptive reuse of historical buildings to cultural centers, boutique hotels and craft markets, and improves tourism and economic revitalization while retaining the district's hijazi architectic identity (Hamouié, 2020; Merrick, 2024) (Fig. 6).

Figure 6: Before-and-after comparison of a traditional Hijazi building in Al-Balad, Jeddah, demonstrating successful heritage restoration

Al-Balad's traditional urban planning, characterized by narrow shaded alleys, mashrabiya screens and courtyards, provides passive cooling, significantly reduces energy requirements and acts as a model for sustainable urban design in hot climate (Alobailan & Alawad, 2022). However, the challenges related to increasing property costs and limited socio -economic inclusion persists. Although al-Balad exemplifies the effective conservation of inheritance and passive climatic design, it is still necessary to achieve sustainable regeneration results.

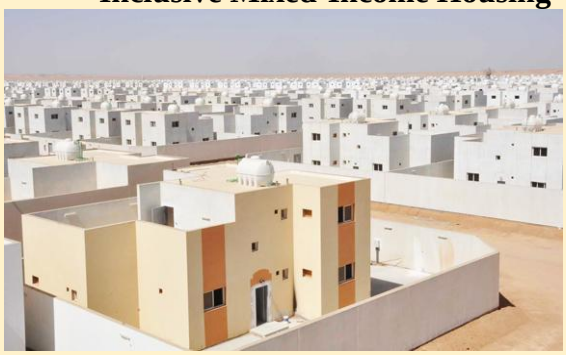
Proposed Framework for Urban Regeneration in Jeddah

Drawing from study findings and international best practices, the following comprehensive framework is proposed for urban regeneration in Jeddah, emphasizing flood resilience, social inclusivity, sustainability, and heritage preservation:

Flood-Resilient Urban Planning

Jeddah's regeneration strategy must adopt GIS-based zoning and comprehensive hydrological analysis to systematically identify flood-prone areas. Implementing nature-based solutions, including bioswales, permeable pavements, underground stormwater reservoirs, and floodable urban parks, will enhance water absorption and significantly reduce flood risks (Hoang & Fenner, 2016; González & Fiorentino, 2021). Additionally, smart city technologies such as AI-based flood detection systems should be integrated to provide real-time monitoring and proactive flood management.

Inclusive Mixed-Income Housing



To address socio-economic disparities, urban regeneration must implement stringent mixed-income zoning regulations mandating affordable housing units within all major redevelopment projects (Fig. 7). Public-private partnerships (PPP) should provide subsidies for affordable housing, ensuring balanced socio-economic integration and preventing gentrification-driven displacement (Al-Hathloul & Edadan, 2019; Dempsey et al., 2012).

Figure 7: Large-scale housing development in Saudi Arabia, representing state-led efforts to address the affordable housing gap through standardized and mass-produced residential units

Participatory Community Engagement

Adopting Arnstein's (1969) ladder of citizen participation, urban regeneration must actively engage local communities at all planning and implementation stages.

Platforms for meaningful community dialogue, transparent decision-making processes, and participatory budgeting will empower residents and foster ownership, ensuring regeneration outcomes reflect local needs and cultural values (Furlan et al., 2020).

Heritage-Sensitive Urban Development

Regeneration efforts must prioritize the conservation of inheritance through adaptive reuse of historical structures, incorporate traditional design elements such as mashrabiya screens and shaded courtyards in modern development (Fig. 8). Guidelines for Urban Design should explicitly mandate Cultural Meists Sensitive Practices, Balance Cultural Conservation with Modern Urban Need (Hamouié, 2020; Alobailan & Alawad, 2022).

Figure 8: Contemporary architectural façade in Masdar City, Abu Dhabi, incorporating traditional Islamic geometric patterns and passive cooling strategies through perforated shading screens

Sustainable Urban Mobility

Development of integrated multimodal transport systems, including BUS Rapid Transit (BRT), metro extensions, bicycle sharing schemes and pedestrian -friendly infrastructure, will improve urban connection and reduce car addiction. Smart Traffic Management Technologies and Transit-Oriented Development (TOD) Planning should be used to optimize urban mobility and reduce traffic overload (Gehl, 2010; González & Fiorentino, 2021).

Resource Efficiency and Smart Infrastructure

Urban regeneration should prioritize sustainable resource management by integrating renewable energy solutions, water recycling systems and energy -efficient buildings. Smart grid,

ceiling solar system, geothermal cooling systems and gray water recycling will improve Jeddah's environmental sustainability, and reduce the dependence on fossil fuels and desalored water (Watson & Adams, 2011; Ghaffarianhoseini et al., 2019).

Adaptive and Future-Proof Urbanism

Implementing modular and flexible urban designs enables adaptive responses to future environmental, economic, and demographic changes. Zoning policies should facilitate flexible land-use transitions, accommodating economic fluctuations and urban growth pressures through modular infrastructure and temporary land-use initiatives (Hall, 2014; Roberts & Sykes, 2000).

Conclusion

This research provided a comprehensive evaluation of urban regeneration efforts in Jeddah, highlighting critical successes and notable gaps. While significant strides were made in heritage preservation, infrastructural resilience, and tourism revitalization in Al-Balad, substantial challenges remain in socio-economic inclusivity, affordable housing provision, and integrated flood resilience. The comparative analysis of Dubai and Al-Balad provided valuable insights into effective regeneration strategies emphasizing technological innovation, participatory governance, mixed-income housing, and heritage-sensitive urban planning.

The proposed comprehensive framework offers a clear, actionable path forward for policymakers, urban planners, and stakeholders to transform Jeddah into a model of sustainable, inclusive, and flood-resilient urban development.

Integrating advanced GIS-based planning, nature-based flood solutions, equitable housing policies, community participation mechanisms, heritage conservation, sustainable mobility systems, and smart resource management practices positions Jeddah strategically for sustainable urban growth.

Ultimately, this study underscores the necessity of balanced urban regeneration strategies that effectively merge environmental resilience, socio-economic inclusivity, and cultural preservation, not only to address immediate urban challenges but also to sustainably shape the future of urban life in Jeddah and similar rapidly urbanizing cities globally.

Recommendations for Future Action

- Immediate implementation of integrated GIS-based flood resilience measures.
- Adoption of participatory planning frameworks ensuring community involvement at all stages.
- Enforcement of mixed-income zoning and housing affordability mandates.
- Promotion of smart infrastructure and sustainable resource management practices.
- Continued evaluation and adaptation of regeneration strategies through long-term research initiatives.

List of Figures:

1. Figure 1: Visit Saudi. (2022). Jeddah waterfront aerial view [Photograph]. Visit Saudi. https://www.visitsaudi.com
2. Figure 2: Arab News. (2019, September 13). Restored heritage house in Al-Balad, Jeddah [Photograph]. Arab News. https://www.arabnews.com/node/1553686/saudi-arabia
3. Figure 3: Ajuntament de Barcelona. (2005). Urban transformation plans and aerial views of Barcelona [Collage of planning documents and photographs]. Urban Planning Archives, Barcelona City Council.
4. Figure 4: Arnstein, S. R. (1969). A ladder of citizen participation. Journal of the American Institute of Planners, 35(4), 216–224. https://doi.org/10.1080/01944366908977225
5. Figure 5: Arab News. (2022, September 21). Jeddah’s urban renewal program targets 64 districts for restoration, modification or demolition.
6. Figure 6: Al-Balad Fassaudian, A. Sha. (2020). Al-Balad, Jeddah.
7. Figure 7: Arab News. (2014, April 7). Mass housing units in Saudi Arabia [Photograph]. Arab News. https://www.arabnews.com/news/554771

8. Figure 8: Foster + Partners. (2010). Masdar City façade design [Photograph]. ArchDaily. https://www.archdaily.com/103222/masdar-city-foster-partners
9.

References:

1 Al-Hathloul, S., & Edadan, N. (2019). Urban regeneration strategies for housing affordability and socio-economic integration: Case studies from Saudi Arabia. International Journal of Housing Policy, 19(2), 243–264.
2 Alobailan, L., & Alawad, A. (2022). Climate-responsive traditional architecture: Insights from Hijazi heritage in Jeddah. Journal of Architectural Heritage, 6(1), 12–23.
3 Arnstein, S. R. (1969). A ladder of citizen participation. Journal of the American Institute of Planners, 35(4), 216–224.
4 Avrami, E., Mason, R., & De la Torre, M. (2019). Values in heritage management: Emerging approaches and research directions. Getty Conservation Institute.
5 Belhaj Ali, A., & Ameur, M. (2018). Assessment of Jeddah's hydraulic protection and management after the 2009 and 2011 floods. Journal of Hydrology and Environment Research, 6(3), 145–156.
6 Campbell, S. (1996). Green cities, growing cities, just cities? Urban planning and the contradictions of sustainable development. Journal of the American Planning Association, 62(3), 296–312.
7 Casellas, A. (2009). Barcelona's urban regeneration: Integrating tourism, heritage, and socio-economic development in El Raval. European Planning Studies, 17(7), 1095–1113.
8 Creswell, J. W., & Plano Clark, V. L. (2018). Designing and conducting mixed methods research (3rd ed.). SAGE Publications.
9 Cugurullo, F., Acheampong, R. A., & Guaralda, M. (2024). Sustainable urban mobility in Dubai: Lessons for smart city planning. Journal of Sustainable Cities and Society, 74, 103–116.
10 Dano, U. L. (2020). Flash flood impact assessment in Jeddah city. Arabian Journal of Geosciences, 13(16), 768–780.
11 Dempsey, N., Bramley, G., Power, S., & Brown, C. (2012). The social dimension of sustainable development: Defining urban social sustainability. Sustainable Development, 19(5), 289–300.
12 Furlan, R., Zaina, S., & Al-Mohannadi, A. (2020). Community participation in urban regeneration: Challenges and opportunities in the Gulf Cooperation Council region. Cities, 96, 102457.
13 Gehl, J. (2010). Cities for people. Island Press.
14 GhaffarianHoseini, A., Tookey, J., GhaffarianHoseini, A., Naismith, N., & Efimova, O. (2019). Urban heat island mitigation strategies: A systematic review of the literature. Journal of Building Engineering, 24, 100772.
15 Gies, E. (2018). Sponge cities: A new model for flood resilience. Scientific American, 319(6), 52–59.
16 González, S., & Fiorentino, A. (2021). Sustainable urban regeneration and flood resilience: Lessons from Dubai's smart city strategies. Journal of Environmental Planning and Management, 64(5), 827–846.
17 Hall, P. (2014). Cities of tomorrow: An intellectual history of urban planning and design since 1880 (4th ed.). Wiley Blackwell.
18 Hamouié, J. (2020). Urban regeneration in Al-Balad, Jeddah historic district. International Journal of Heritage Studies, 26(11), 1083–1097.
19 Hoang, L., & Fenner, R. (2016). System interactions of stormwater management using sustainable urban drainage systems and green infrastructure. Urban Water Journal, 13(7), 739–758.

20 Merrick, J. (2024). Balancing modernization and preservation: Al-Balad’s urban regeneration. RIBA Journal, 131(4), 45–51.
21 Ortega-Fernández, J., Martín, B., & Serrano-Estrada, L. (2020). Urban regeneration and economic empowerment: Promoting sustainable livelihoods through vocational training and entrepreneurship. Cities, 102, 102739.
22 Pendlebury, J., Short, M., & While, A. (2004). Heritage and regeneration in urban planning. Planning Practice & Research, 19(3), 361–377.
23 Roberts, P., & Sykes, H. (2000). Urban regeneration: A handbook. SAGE Publications.
24 UNESCO. (2014). Historic Jeddah, the Gate to Makkah. UNESCO World Heritage Centre.
25 Vincent, P. (2003). Jeddah's environmental challenges: Groundwater pollution and infrastructure deterioration. Arab World Geographer, 6(2), 123–137.
26 Watson, D., & Adams, M. (2011). Design for flooding: Architecture, landscape, and urban design for resilience to climate change. John Wiley & Sons.
27 Yang, X., Teng, T., & Li, Y. (2019). Sustainable parking management and urban mobility: Best practices from global cities. Journal of Urban Mobility, 2(3), 123–137.
28 Youssef, A. M., Pradhan, B., & Maerz, N. H. (2016). Analysis of urban flood hazard and vulnerability in Jeddah city, Saudi Arabia. Geomatics, Natural Hazards and Risk, 7(3), 942–964.
29 Yuen, B. (2005). Searching for place identity in Singapore’s Chinatown: Challenges of urban heritage conservation. Habitat International, 29(2), 197–213.