Abstracts of City & Regional Planning Final Projects (Master Thesis Equivalent) Supervised by Dr. Habib Alshuwaikhat

Project title	**Urban Planning Guidelines for Jubail Industrial City December 1990**
Student name	**Ehab Al-Amri**
Advisor	**Dr. Habib Alshuwaikhat**

Abstract

Jubail Industrial City built as a new town on a clear land to support petrochemical industry. The city physical plan adopted new planning concepts especially for commercial services under the assumption that the city will reach its target population of 400,000 inhabitants within 25 years from the day construction started. However in 1984 Master Plan Update, the target population was reduced to 270,000 and the completion date have been extended ten more years due to the economic recession confronted Saudi Arabia in 1983. The development policy has been changed from mass production of housing by the government to natural production of houses by the private sector and individuals.

The project have dealt with two problems;

First the growth of commercial services is not growing to satisfy the existing demand, because the commercial system have not been changed to adopt the change in the development policy. By analyzing the existing commercial system it have been found that dispersed commercial centers and single land use concept are the major constrains to commercial growth in MAJAS.

Second, the Royal Commission in the coming future will subdivide the second phase of the community because most of the residential lots within the first phase have been leased to individuals and the demand for more residential lots is increasing due to the adaptation of the new development policy. The project provided urban planning guidelines for residential subdivision that assure optimal relationship between spatial elements and people, which help the social interaction in the community. The guidelines propose to increase the number of local mosque and reduce the size of neighborhoods and sectors, eliminate landscaped pedestrian routes, and provide kick about in each neighborhood.

Project title	**Managing Growth and Development in the Riyadh Metropolitan Region - An Assessment Study** **June 1997**
Student name	**Shaibu Bala Garba**
Advisor	**Dr. Habib Alshuwaikhat**

Abstract

The study examined urban growth in the Riyadh Metropolitan region, and assessed public sector management of urban growth and development. The scope of the study was limited to assessing the overall framework for managing growth and development. The report identified the growth trends in the city and the factors that have motivated growth. The problems associated with growth were also identified, as well as the various public policy actions taken to address the problems. An assessment of the effective of the management system was carried out. Factors hindering effectiveness in management were identified. The report concluded that the potential of further growth in Riyadh coupled with the persistence of symptoms pointing to a lack of complete control in the management of the city necessitates a reform of the urban management system with a view to improving effectiveness. Suggestions for the reform of the urban management system were advanced.

Project title	**Community Structure and Residential Satiosfaction In A Transitional urban Environment: With the Emphasis on Residential Relocation June 1990**
Student name	**Said A. Alkhars**
Advisor	**Dr. Habib Alshuwaikhat**

Abstract

As a phenomenal result of the rapidly growing economy of Saudi Arabia during the last 20 years, settlements' structure has undergone dramatic change both socially and physically. This has appeared in the form of high urbanization rate as well as redistribution of population concentration within the urban centers leading to an explosive growth of residential areas. Unfortunately this development has been on the expanse of the traditional pattern of living environment.

This study is an attempt to investigate the characteristics of Al-Hasa newly planned community and how it differs from the traditional environment in the old quarters in addition to its influence on residential satisfaction as well as residential relocation. Data was collected through a field survey of 100 households distributed between five neighborhoods; three have been developed mostly before 1980 and two have been developing after 1980. This is to focus more on the impact of the economic factor during the after the boom period. Using SAS computer program, Data was analyzed statistically based upon two major tests; ANOVA and the analysis of contingency tables.

The results that have been found here emphasize dramatic changes in Al-Hasa community both socially and physically:

- There is a decrease in the social interaction parallel with the decrease of adopting traditional housing pattern in the new areas.
- Very high polarization was documented based upon origin and kinship.
- Because the tendency of having large household size is prevailing in Al-Hasa community, it is proved – on one hand – that dwelling space is highly associated with residential satisfaction and hence residential movement. On the other the increasing rate of youthfulness in Al-Hasa community is high. Accordingly it is expected to lead a great demand of housing in near future.
- Generally, the number of residents in areas developed before 1980 who plan to move is higher than those living in areas developed after 1980, mostly looking for better living environment where more attractive neighborhood appearance, more friendly people and better housing design are expected.
- Individual socio-economic characteristics were found to have great influence on the tendency to move especially education level and income level.

Accordingly, authorities are recommended to consider providing adequate dwelling space to accommodate such big families in areas being planned to meet social and physical needs in order to achieve better level of residential satisfaction in future. At last, this study is just an introduction for further studies in this field especially with respect to measure the dimension of this change and to what degree its influence on appearing new social values as a response to the urbanization process that are similar to what have been found in Western communities.

Project title	**Tourism Planning A GIS – Based Approach for Allocating Recreation Activities: The Case Study of Al-Uqayr May, 2000**
Student name	**Adnan Al-Jaber**
Advisor	**Dr. Habib Alshuwaikhat**

Abstract

This project is design to fill a need in providing an application approach for environmental and sustainable development of tourism that is responsive to community desires and needs in a manner that sustains its resources for perpetual use, and helps conserve and not deteriorate an area natural.

Al Uqayr spread over a length of 155 km, is a sub region on the eastern coast of the Arabian Gulf. It has historical buildings and archeological sites, which coupled with the sand dunes, beautiful beaches, attractive peninsulas, bays, lagoons, and naturally growing palm t5ees in fertile soil, presently functioning as weekend tourist spot for the people of Al-Hasa. In view of an excellent potential for tourism development of this area, moreover, rational management of tourism may contribute significantly to the protection and development of the physical environment.

The information combined and manipulated in a GIS to allocate a potential site for recreation activities qualitatively. The resulting information translated to formulate a structural plan of the various activities proposed to be involved in the coastal tourism complex.

Three alternative strategies prepared for providing recreation activities of tourist complex viz. Uni-Nodal Development, Multi-Nodal Development and Linear. The final selected strategy for development of Al Uqayr Tourist Complex could be defined as “Multi-Nodal Development with possibility of some intermediate development in between the major nodes.”

Project title	**Sustainable Indicators in Master Plans: Towards Sustainable Cities in Saudi Arabia May 2000**
Student name	**Naeem M. Al-Hussain**
Advisor	**Dr. Habib Alshuwaikhat**

Abstract

The sustainable development study highlights the importance of including in any development plan the needs and dignity of the present generation as well as future generations. This study sets forth a set of three sustainable indicator categories consisting of 15 economic, environmental and social indicators that define the concept of sustainable development. Using these indicators, a sample of three master plans of Saudi cities – Al-Hasa, Jubail and the Dammam Metropolitan Area – is assessed to determine how well the master plans' elements cover the sustainable development indicators aspects. The assessment shows that the master plans' elements are somewhat covered with respect to the economic indicators. Environmental and socially sustainable development indicators are partially covered. In addition, the master plans do not provide balanced support of all 15 sustainable development indicators, some of which are supported significantly more than others. It is recommended that the master plans be utilized as tools for incorporating sustainable development indicators into the planning of cities. Further research is needed to assess the sustainable indicators in the current plans of Saudi Cities. It is essential to develop a comprehensive Local Agenda 21 in future studies to promote the sustainability of Saudi cities.

Project title	**Urban Spatial Systems: A Multidiscipline Modeling Perspective For Collaborative Decision Making** **May 2001**
Student name	**Danjuma Ibrahim Nkwenti**
Advisor	**Dr. Habib Alshuwaikhat**

Abstract

Urbanization and Urban Systems are increasingly grappling with problems of rapid technological evolution and complexity of spatial interactions. The problems result from their interdisciplinary nature, lack of a coherent body of theories and idiosyncratic research orientations. This study sets out one option for addressing such problems. The first part surveys concepts that have characterized interaction of urban spatial systems to date. The second part establishes a conceptual model to operationalize emerging planning and development concepts, and to conceptualize technology-driven developments. The third, and final part demonstrates its applicability, through qualitative and quantitative analyses, web interfaces, and the rational mechanism of a GIS hub. Conclusion of the study suggests the model could be resource-effective in fostering collaboration as well as lending direct application of concepts that have at best been illusive, especially in organizations and municipalities where it matters most. The study recommends that mechanisms for implementation be put in place through institutional curriculums dealing with holistic planning concepts, organized conferences and symposia that will foster exchange of resources and research activities, and thus delimit idiosyncratic approaches to solving urban problems.

Project title	**GIS-BASED URBAN SUSTAINABILTY ASSESSMENT: THE CASE OF DAMMAM CITY, SAUDI ARABIA** **May 2004**
Student name	**YUSUF ADEDOYIN AINA**
Advisor	**Dr. Habib Alshuwaikhat**

ABSTRACT

The concept of sustainable development has been widely accepted as a laudable goal to be achieved by different nations. Countries and municipalities especially in developing countries still find it difficult to operationalize the principles of sustainability. Those communities that are able to apply it do not have adequate means of evaluating how successful the application is. This study discusses the assessment of the application of the principles of sustainability especially with regards to city planning. The vast opportunities of spatial analysis made available by the advances in GIS technology and their utilization in sustainability assessment are also discussed. Based on the discussion, a framework of indicators is developed to assess the sustainability of Dammam city, Saudi Arabia. The study concluded that some aspects of sustainability are not addressed by the planning process and the plan document. The planning process and the plan document addressed economic sustainability issues more than social and environmental issues. The result of the GIS-based sustainability assessment of the study area produced similar findings. The study developed a sustainable planning guidance and made some recommendations based on the findings.

Project title	**A GIS & Syntactic- Based Model for Evaluation of Sustainable Neighborhood Design January 2005**
Student name	**Mohammad Obaidullah**
Advisor	**Dr. Habib Alshuwaikhat**

Abstract

The concept of land subdivision in early developments used to be an easier process reflecting the needs of the community. The issues like recent technological developments and globalization has changed the activities and needs of community, which requires the neighborhood to be designed under the guidelines of Sustainable Urban Design (SUD). The objective of this research was to develop a model based on the design principles of SUD, which acts as a framework to evaluate the neighborhood for sustainability for future. It helps the planners, developers, and local municipal authorities to plan, design and build a neighborhood that reflects a society which serves the people's needs efficiently.

The application of the designed evaluation model was divided into two types; GIS based evaluation and Syntactic based evaluation. The main parameters that were considered are resource allocation; accessibility of street network; and accessibility of services. Spatial analyst tool of ArcGIS 9.0 measures the site suitability, allocation of resources and accessibility of services. The syntactic evaluation is carried out by using the AXMAN 3.0 which basically measures the integration of the street network.

The application of model on a hypothetical study area shows that, the developed GIS and Syntactic based models act as a tools for evaluation of design guidelines and principles to develop neighborhoods with good accessibility and resource allocation.