

**Review Article**

**PRINCIPLES AND DESIGN OF ADMINISTRATIVE-COMMERCIAL  
COMPLEXES REGARDING SUSTAINABLE DEVELOPMENT  
APPROACH (CASE STUDY: SHIRVAN ADMINISTRATIVE-  
COMMERCIAL COMPLEX)**

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**ABSTRACT**

Spaces at all possible scales including the macro space to micro space at daily structures constantly keep changing, paving the way for linking the multiple identities to each other. Under this impression from the space, distinctive design and design for changing what has embedded in physical and social infrastructure come to realize. Form, function and meaning have been accounted as three constituents of space. Any space will include all the spaces and reach to totality in case of being transformed to place. This transformation occurs in case a thorough coordination develops between form, function and meaning. Indeed the more physical harmony, activities and concepts are consistent with each other — the space will enjoy a better quality. Developing a space with visual attraction through making a difference and diversity at the height of bodies, flooring well suited with the field space, and lighting the space to increase its beauty are required in the spaces in which people more often come and go and also required for meeting the people's needs. Without doubt, sale is considered after production of a good, that success of a commercial complex lies on ending with a good sale. To achieve this, commercial complex should be located in a good area, having the required attractions for the clients. The contributing factors in tempting the person to the shopping center include the attractions at commercial place, advertisements and pedestrian traffic at shopping center. Attention by international assemblies to the issues pertaining to sustainability has caused formation of many patterns via this approach, of which it can refer to design of sustainable buildings and sites. The studies at the area of sustainability have not come in practice and remained just as theories. In this regards, with regard to the growing significance of this approach, the present research aims to elaborate this issue so as to represent an approach.

**Keywords:** *Sustainable Development; Sustainable Architecture; Commercial-Administrative Complexes; Design Principles; Futurism*

**INTRODUCTION**

With regard to the issue of energy crisis and environmental pollution such as pollution of air and resource which are derived from surplus use of renewable energy resources such as oil, gas and so forth, the sustainable development as the reasonable reaction against energy crisis was proposed. Since about 50% of fuel reserves are consumed in buildings, the necessity to pay attention to the constructions is increasingly revealed. Hence, sustainable architecture has been mentioned as a reasonable way to resolve the problems pertaining to issue of energy in buildings. The present research aims to represent how the settlement is designed based on principles of sustainable architecture for the clients who refer there, in which the concepts of sustainable architecture relevance with concepts of settlement architecture are used. Settlements are somehow considered as a temporary accommodation for the residents who can stay there for a short or long while. Hence, all the concepts and implications which are considered by the house designers in designing a favorable house should be considered in design of settlements. Access and vision to green space, sense of security and sense of belonging in the individuals who have decided to stay in a settlement for a long time are mentioned as the points which must be drawn into attention. Further, with

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regard to increasing advancement in technology, an attempt has been made to minimize the fossil energy and exploit from natural energies to provide electricity, heating and cooling at the building as much as possible. Employing the principles of sustainable architecture for maximum use from natural resources and minimum use from fossil fuels are mentioned as the approaches which are used in this research.

#### **Space Perception**

When talking about architecture and proposing the issue of perception in it, the man involves in the term 'space' and perception from it; in other words, space implies a type of perception, because quality of architecture is a perception in the man's mind about the building, that two factors contribute in any perception including what is perceived and who perceives. Therefore, space is neither exclusively objective and out of man's mind nor subjective and devoid of occult, combined of both these. Christian Norberg-Schulz in the book "architecture, meaning and place" mentioned 5 more spaces except the architecture space as follows:

- practical space or the space of natural and biological phenomena
- space of perception and the man's immediate navigation at the area
- the space of universe pertaining to the image recorded in the man's mind
- the space of recognition of the physical world which associates to the scientific perception
- Abstract space of logical relations

Architecture space is in a way that associates to five spaces mentioned above; as observed, the issues tend from objective issue to subjective issue, such that the fifth space is thoroughly abstract, as a result it can assume the space as a quality that the person finds it under influence of architecture body.

#### **Sustainable Development and Sustainable Urban Development**

To date a variety of definitions have been obtained for the sustainable development, yet on the whole the sustainable development can be known as the man's effort for reconciliation between development and protection from the environment and existing resources in the world. Theory of sustainable development has been rooted in theories of development on one hand and in environment-orientation on the other hand. In other words, sustainable development can be known as meeting the needs at current age without damaging to the resources that can be used by future generations to meet their natural needs. In this regard, modern urbanization followed by classical pattern of development and stereotyped models of urban development which are indifferent to the local conditions and characteristics have not just developed unsustainable conditions within cities but also followed by unsustainability in the surrounding regions. In general, thought-provoking scholarly topics in sustainable development derive from the theories in following:

1. Maintenance, solidarity and ecological integrity
2. Environmental Integration and protection at the area of development
3. Consistency and cross-correlation (north and south)
4. Providing the basic needs for all the people
5. Attention to all the generations, intra-generations
6. Emphasis on the application of science in solving development problems
7. Accepting economic growth under framework of limitations
8. Accepting long-term process of development
9. Correlating the values pertaining to natural environment and cultural environment

To sum up, the new idea of sustainable development is based on considering all the things at the environment in bonding with each other in line with systematic thinking. Hence, it requires examining any development phenomenon at economic, social, cultural and environmental dimensions under influence of each other.

The main purpose of sustainable development

The main purpose of sustainable development is to improve the quality of life for all the people and protect the current ecosystem in a better way. This purpose implies a contradiction that is known as major characteristics of sustainable development: providing necessary growth to improve quality of life and protect ecosystem.

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**Table 1: The effective components in sustainable development (source: Keshtkar *et al.*, article “green roof system development”)**

Components	Sustainable Development
Man	Human-based instead of industry-based Improving quality of life instead of quantity of life
Children and adolescents	Attention to children and adolescents at a healthy environment regarding their constructive role in future
Women	Attention to women’s rights Women’s more participation
Ecology	Standard principles of ecology Development of green spaces
Culture	Combat with westernization together with importing technology Localizing technology and paying attention to cultural components
Education	Education levels, allocation of financial resources to people Education: the most important factor in human attitude and behavior
Knowledge	Equal distribution of technology and Knowledge Awareness from local knowledge and technology
Security	Strategy of world security Building peace based on fair foundations
Participation	Participation by people at community General consciousness

**Table 2: Components of sustainable development and its manifestation in sustainable design (source: Keshtkar *et al.*, green roof development)**

Components of Sustainable Development	Manifestation in Sustainable Design
Economic sustainability	Improvement of the current economic status without destruction of resources
Social sustainability	Attention to human and community Increase of social bond and public participation Attention to cultural identity
Environmental sustainability	Reduction in use of natural resources and renewable energies Avoidance from waste of energy resources

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**Table 3: Sustainable design in line with aims of sustainable development (source: Keshtkar *et al.*, green roof development)**

Sustainable Design in line with Aims of Sustainable Development	Design of Architecture Based on Sustainable Design
Quality of sustainable design	An emphasis on more working and less using of facilities Spaces and ventilation, attention to nature and suitable skylight Access to high standards of security and comfort The least damages to surrounding environment Use of experiences in the past to improve quality
Principles of sustainable design	Recognition of place, environmental protection and easy accessories The design harmonized with nature and use of green space at building Returning to life by setting the sustainable development at nature cycle Susceptibility to needs at community
Nature as a guide	Use of natural patterns at construction Attention to vernacular traditions at regions Inspiration from ecosystem at construction systems Working more and decreasing use of facilities Use of renewable energies such as oil and solar energy

**Approaches of Sustainable urban Development**

1. Minimize the environmental consequences
2. Minimize the consumption of non-renewable resources
3. The exploitation of renewable resources

**Presumptions of Sustainable Urban Development**

In line with realization of sustainable urban development, several conditions must be provided so as to pave the way for sustainable human development and improvement of social welfare of citizenship, of which it can refer to setting social justice, climatic design adapted with human environment, enhancement of social correlation structures such as commitment and accountability, enhancement of social and family foundations and revitalization of public environment, building a structural order at urban space to perceive aesthetics, improving the exploitation from urban spaces, increasing citizenship satisfaction, integrating a part with visual structure of environment and urban landscape(Haroy, 1997; Bahreini and Shiah, 2002; Bahreini, 1999; Lynch, 2003; Bahreini, 1999; Cullen, 1998).

**New Ideas in Sustainable Urban Development**

In most of developing countries, infrastructural facilities, technology and competent force required in industry have existed in cities, thus numerous economic and manufacturing activities have been developed in these cities resulting in rapid growth of cities.

On the other hand, centralization of capitals in big cities has raised economic duality; as Friedman (1982) says, these cities like a strong pump tempt the capitals and efficient manpower and cause depletion of them from other areas especially slum areas, resulting in economic duality at the area. Rapid growth of urbanization is one of the effects of special attention to industrialization of communities and centralization of capitals in big cities.

Mathur (1998) in his studies in the third world countries deduced that the process of economic growth in developing countries and increasing natural growth of population can be two main causes for urbanization and population density in big cities resulting in urban primacy. Simmuns (1994) proposed that economic

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development and centralization of capitals have raised growth of big cities, knowing the effective factors as follows:

- Public health program that reduces mortality
- The concentration of industries in the major cities
- The concentration of buildings and public activities in the large cities
- Mechanization and modernization of the means of agricultural production

It should be noted that difference on urban and rural income level is one of effective factors in immigration from village to city and big cities. It is obvious that population density in big cities has raised several problems in these cities, that most of urban and regional planners believe that excessive growth of cities and big cities raise huge costs for government.

### **Concept of Sustainable Development**

Sustainable development implies movement towards axis of man and environment and pays attention to development of economic facilities based on environmental considerations and social justice. Sustainable development was proposed followed by the problems which have been raised due to economic development after the world war when the excessive development raised class conflicts and environmental problems. Under development of urbanization, the concepts pertaining to sustainable development were entered to this area, that the sustainable urban development is the product of new outlooks to social, spatial and environment justice in city.

Sustainable urban development: attitudes and executive principles in developing countries

Comprehensive attitude towards policies, plans and urban development patterns as well as formulation of integrative social, economic and environmental aims are centered at policy making and planning for sustainable urban development. Realization of these aims requires evaluation of the results and outcomes of urban systems for economic, social, cultural and environmental changes, for which fundamental developments in urban planning association are required. It can hesitate about building balance between small and big urban centers, collaboration between public and private sectors, and formulation of local strategy as the policies to achieve sustainable urban development.

### **Design of Commercial-Administrative Complex**

At the Contemporary World Capitalist System, the city is assumed as the suitable place and urbanization is assumed as the favorable way for living in it. Influence of capitalist culture in the third world including Iran has caused heterogeneous urban centralization and rapid growth of urban population due to immigration of villagers to city. Design of commercial-administrative complex has been regarded as a process which causes transfer of population of the poor to the cities. In this regard, due to social inconsistency and class conflict among the individuals, the problems due to lack of balance and sustainability in these communities raise next damages. The applications involved in social interactions and developments include use of commercial-administrative complex that causes gathering by individuals from different social classes and developing most of commutations in the main artery of the city.

### **The Early Designs**

Over two decades, the investors not just accepted the design of the views from the architects in which the stores were being set in a direct line. They believed that the stores must be of importance at the same level and be attractive to customers at the same level, that no store must be forward or backward the rest of stores. If a sign or board is embedded across a store, it will be objected to this action due to diminishing the view of next store. In this regard, the investors and shopkeepers put an emphasis on this point that design of commercial centers must be in a way that the purchasers enable to watch the boards at all stores by entering to the center of city. Yet, this has been profitable for the stores with more reputation, yet it raised problem for rest of shopkeepers. In this regards, the purchasers passed across rest of stores to arrive at the reputable store without any attention to the rest of stores.

### **Irregular and Varied Forms**

Gradually, with emergence of newer purchase centers and acquisition of more experiences, this theory was proposed that design in form of a direct street not just has no linkage with the success at sale, but also has the outcome under uniformity of customers. Fan Yu Al Hal shopping centers (FANEUIL HALL) in

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Boston which are mentioned as the most successful shopping centers have been developed from three big storages at the 19<sup>th</sup> century. Followed by modernization and emergence of a new urban shopping center, winding alleys were developed in these storages which gave a secret mode to them. In general, in today's shopping centers, the passing area across the stores must not be a narrow alley between rows of the stores. These places should have been diverse and colored, motivating the purchasers and having the areas for having rest and changing taste. Restaurants, coffee shops and tea houses and so forth are the factors which have induced people to this environment. The environment at a shopping center must be diverse to the extent that the customers enjoy it the most and intend to stay in it for a long time and return to it as much as possible. This causes increasing sale and more replete profit at shopping centers.

### *Design of External Space*

This aspect of design at shopping centers which has been regarded as a contributing factor in customers' view and beautification in environment has been rarely drawn into attention. For this, numerous shopping centers are seen through which several hundreds of square meters of asphalt surfaces have been enclosed. The reason for this lies on this fact that design of the landscape at these centers is the last issue in which end of project is taken into account, such that if the cost of project exceeds the standard amount, the investor will neglect it. Design of environment can be an important factor for market attractiveness and also an effective advertisement, that it generally enjoys two aspects including design of internal spaces and design of the environment out of building and parking lot. Due to control over the climate inside the shopping centers, the plants at hot regions can be planted there, yet a high priority has been given to water, sufficient light, sewage and maintenance. It should be noted that the decorations at shopping centers must not be in an extent to block the view of stores or the commutation area for the customers. In this regard, if the conditions do not be suitable to plant natural plants, it can use other decorative elements. Concerning design of the external environment in building, the contributing factors include:

- budget
- scale and form of the shopping centers
- proper maintenance

An attempt must be made to end with the decorations at the first year of establishment of shopping center, because the early years for establishment of shopping centers can be the most important period at its success. If a shopping center succeeds at the early stage, its position will be stabilized. Therefore, external environment at shopping center must be accomplished from early period of its establishment so as to have the highest effect on the viewers. Scale and form of building must be in a way to affect beauty of environment, e.g. if a building with 500 meter length and 6 meter height enclosed with several hundreds of spiritless parking even with design of a magnificent environment cannot induce the viewer. Few points with creativity can have the highest effect with the least cost as follow:

- centralization of plants close to the leading building where it has the highest effect on viewers rather than around the land
- building a suitable effect through planting several trees close to each other in a linear or mass form, because planting plants one by one at large spaces does not seem interesting
- planting long rows of plants that can be not that much expensive at any suitable areas of parking. If this action is taken properly, spiritless environment of parking can seem as a sea of asphalt, transforming the environment to a beautiful space.
- planting the plants which have grown to a sufficient extent. It is better to use plants at larger sizes from the early establishment of shopping center rather than waiting for growth of the plants to a favorable size. In this regard, to reduce costs, it can use cheaper plants or remove planting some plants. Further, it must be noted that using green space is accounted as a pillar of sustainable development.

### **Interior Design**

#### *Features of Spaces*

An environment must be built at shopping center to raise an integrative and cohesive state in it in addition to keeping up with independence of spaces, mentioned that such a dual aim can come to realize only via a proper design and planning. If the external façade of stores enjoy diverse colors and patterns, this will

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more likely induce the customers in their purchase. In this regard, the best way is to avoid disturbance by setting civil rules, such that a framework must be set by the architects to maintain all diverse patterns in integrative and homogenous forms with sufficient power.

### *Shop front Facade and Window Display*

At the early years of establishment of shopping centers, an attempt to increase level of design and decoration of Shop front facade and window display was failed. It can say that only single-unit small stores succeeded at design of Shop front facade & window display. Instead of few commercial centers, the rest of shopping centers did not pay attention to this problem, that any outrage by the planning authorities on how to design and decorate stores seemed far from expectation. Indeed, attention to this issue was not deserved for the authorities.

### *Appropriate Lighting*

Appropriate lighting plays a critical role in beautification of shopping center, that the amount of light must be sufficient, attracting people to have a look at shop front facade and window display. Natural light can be also used, yet due to open centers till mid night, sufficient artificial light regardless of natural light must be also considered.

### **Facilities, Services and Parking**

#### *Facilities*

Nowadays, there are central heating systems in most of commercial spaces such as stores, offices, hotels and markets that a fixed degree of heating under all weather report and current conditions has been considered, i.e. these systems are equipped with appropriate temperature and humidity in winter, low humidity and coolness in summer and ventilation in moderate seasons. Issue of cooling is much more important than heating, so that cooling shopping center is critical at cold climate due to the temperature and humidity arisen from population and heating arisen from advertisement boards especially those ones which generate abundant heat. This issue causes working cooling systems at shopping centers even at the areas with cold climate.

#### *Services*

Delivery of good to several stores and removal of wastes from shopping centers are called the facilities for services. Providing services and status of truck are mentioned as important issues at shopping centers. Trucks are bigger than other vehicles, required for a large area for bypass. Garbage trucks generate a disgusting flavor, thus the area of delivery of load and collection of waste must be considered at the back of complex. Using the elevators to carry the load seems required at multi-storey centers, which the elevators at the back of centers connect to the emergency exit corridors in cases of firing.

#### *Parking*

Parking has been mentioned as the early principle in development of a shopping center. Needing to a convenient parking has been mentioned as the fundamental need at these centers regardless of attention to size and position of them. With regard to the public vehicles and the number of customers who refer to the shopping centers on foot, three parking places are required per 100 m<sup>2</sup> surface for infrastructure of stores.

#### *Service Spaces*

Service spaces refer to the sectors in which a variety of services are supplied to the customers and staffs. These spaces include bank, post office, first aid and safety center, kindergarten, chapel and taxi agencies. The applicants who refer to these centers except for bank and post office will be generally the staffs who work in work offices and in some cases the customers who refer to market.

#### *Overview of Rules and Regulations Related to Commercial Buildings*

Commercial lands located at centers of four-storey areas have been deemed as the spaces in doing the commercial tasks, that the fourth to seven storeys have been deemed as the spaces in doing variety of commercial tasks, and eight storey to above has been deemed as the space to use complex uses. Employment rate at storey's based on building density is as follow:

-in building density with the rate of 180%, 86% and 45% of building density has been considered in ground and first floor, and second and third floor, respectively

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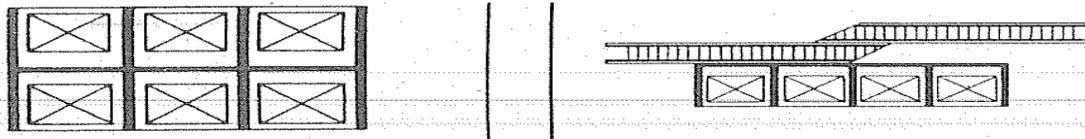
- in building density with the rate of 280%, 60% and 45% of building density has been considered in ground and first floor, and second and third floor, respectively
  - maximum underground storey's for building density equals to 180% at the storey
  - maximum level at each underground storey has been equivalent to the level of ground floor, and higher level is subjected to approval by technical commission of municipality.
  - Three underground storeys have been permitted at special densities, and more than this is subjected to approval by technical commission of municipality.
  - Construction of the pilot in commercial buildings is not allowed
- The regulations for abutments and accessories for different users
- at proximity of residential units with commercial and administrative buildings as complex units, providing direct accessory at residential units and separation of the parking lots at residential units from public parking lots are required.
  - concerning commercial functions, the input or separate inputs with sufficient space for entrance, passenger and freight elevators, the night watch and so forth must be predicted based on the regulations of at centers of units, regions and areas.
  - observing lack of effects of commercial buildings and at least 15 meter distance between windows and openings from adjacent buildings are required.
  - It must not have access to commercial roofing by individuals
- The standards for design of commercial complexes

### Retail Stores

- The optimal height of the vision surfaces must be at the distance 30 cm from the shop window for short people (68.7-279 cm) and tall people (68.7-279 cm)
- the proposed distances between two rows at two sides of a corridors range from 297.2 to 304.2
  - At this area, the range of activity for the customers at counter at two sides of a corridor ranges from 297.2 to 304.2; at this area, range of activity for the customers who are in front of counter develops.
  - predicting a staircase to the depth of 1.20 meter per 9 meters is required
  - Inclined surfaces and building entrance should be covered

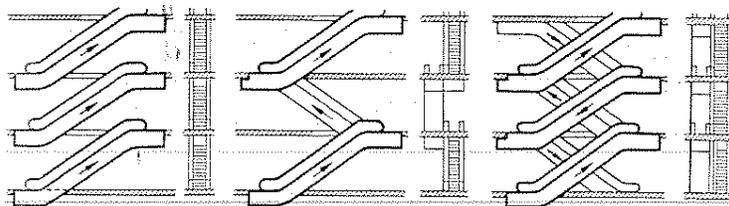
### Elevator

The public buildings in which elevator is used to access the floors, just one elevator for the disabled people on wheelchair is required.



- minimum waiting space in front of the elevator at each floor is 150×150 cm
- most of the customers use the escalator, and the elevators must be available for groups, available from the entrance. At big stores, generally the escalator is centered at the building with distance under 50 meters

### Escalator



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The best position to place escalator has been at center, which can be seen from all entrances  
-The escalator is deemed for people's commutation, thus it has not been design for emergency exit

-Escalators at commercial centers and big complexes are designed with 35 degree

-at the exit areas and access to escalator, a flat section at the depth of  $250 \leq$  must be considered

The classification for the average commutation which occurs on the stairs of a big store is as follows:

-fixed stairs(2%)

-elevators(8%)

-escalators(90%)

-About third fourth of the individuals use escalators for their commutation

-in average, an escalator is installed per 1500 m<sup>4</sup> at commercial center

-range of customers' activity while sitting: 66-76.2 cm

-range of customers' activity while standing: 45.7 cm

-the proposed distances between two counter rows at two sides of a secondary corridor: 167-228 cm

-the existing distance in front of the shelf for the one who asked taking the good: 45.7 cm

-the height of chair for the customer who has sat: 53.3-55.8 cm

-the height of counter: 86.4-91.4 cm

-the width of counter: 45.761 cm

-maximum height for the females: 167.7

-maximum height for the males: 182.9 cm

### **Grocery Stores**

When we examine dimensions of human pertaining to design of grocery stores, shopping carts must be considered as an additional part in human body, that such combined sizes are considered as a unit in determination of distances.

-ultimate occupied distance by a customer and shopping cart must be 106.7 cm

-the required distance for a man and woman who move besides each other must be 152.4 cm

-the required distance between the monitoring counters for the normal customers and the people on wheelchair must be 91.4 cm

### **Shop Window**

The light at shop window plays a major role in increasing net value of shop window. The glare, the glasses reflecting the light at deep and dark shop windows in proximity of pedestrians is useless, because the goods at the store are seen without any trouble.

Today, attractiveness at shop windows relies on the artificial light. Using sun canopy to protect from the goods at all directions except for northern direction is required. Plastering shop window must be integrative with the store, pertaining to the sun canopy.

### **Buffet and Tea House**

These spaces provide the possibility for drinking hot and cold drinks or cookery and sandwich at various sectors. This space can provide services for the booths via telephone and take action to supply services for the clients. Buffet and tea house are generally considered at spaces with high density so as to provide better services.

### **The Standards to Design Restaurant**

The requirements at restaurant: restaurants must be designed in a way to use different capabilities in it such as using the tables for 2,4,6,7 and 10 persons. Further, the place for sitting the host and guest must be considered, yet the capability to change such sitting to ordinary tables must be possible. In ordinary tables and designs for counters and collective attractions, it is better to set the columns in restaurants in a way that the columns are set in proximity of the tables for groups or at the corner of tables. A separator space with insulation in sake of voice must be considered between restaurant and kitchen. The accessories for the guest and the places for providing services must be thoroughly separated. The width of the places between tables and chairs to pass through them must not be under 90-135 cm. an important factor that must be considered in design of restaurant lies on relevance of decoration and light. Big collective spaces must have the capability for division to smaller spaces with more use, that it can use the plains at different

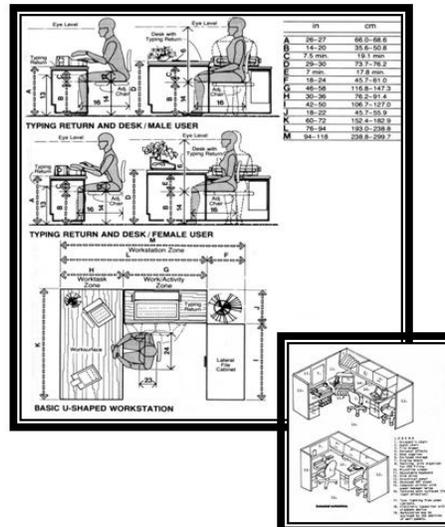
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heights and different forms of decoration, if required. Difference at public area raises problem for the barmaids, yet building difference at the area has a huge contribution in design, mentioned that the leading area at restaurant and the linkage between dining place and kitchen must not be considered over 2-3 stairs. Fence must be used in the places with different in sitting areas.

**Counter to Serve Food**

A space for little food that is served in the same place or taken by the customer to the table must be considered. 2.2-6.5 m<sup>2</sup> space must be considered for cooking area and counter.

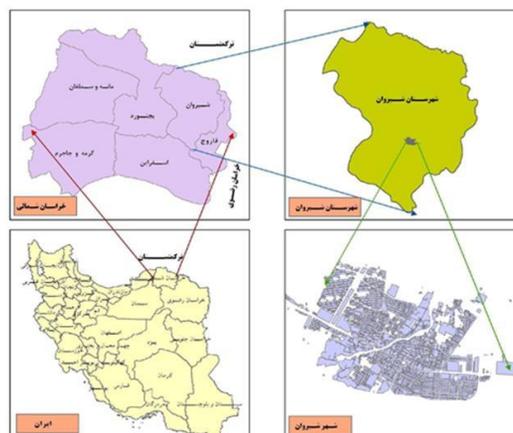
The standard for administrative spaces



**Overview of Case Study**

*Historical Background of Khorasan*

Without doubt, Khorasan province with diverse and ancient geological structure, different climate, special geographical status has been mentioned as the oldest area in which human activities including trade, military and so forth have started and continued; due to this special status, the oldest and longest road between west and east (the silk road) can be connected to each other through Khorasan. The geographical diversity in Khorasan despite hot climate at the southern part and moderate climate at northern part at province with substantial heights including Binalod, Hezar Masjed Kapeh Dagh, Ghahestan and so forth has been regarded as a suitable infrastructure for the man’s settlement from the long lost past at different periods.



**Northern Khorasan at a glance**

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### ***The Appellation of Shirvan City***

One of the reasons for naming this county with Shirvan because of its status at northern slope of Aghazghapouli Mountain along the eastern side of Gharavol Mountain prevailed with Shirvani.

The second reason to name Shirvan lies on hunting and keeping lion (Shir in Persian literature) in the past.

The third reason lies on grape gardens and how to prepare extract of grape (Shire angour), because special shireh houses were being used in the past to prepare shireh with their ceiling made of wood and clay. Hence, this city is called by the architects as shirvan.

### ***Geographical Status***

Shiravan as the center of county in sake of geographical status has been located in 37 degrees 23 minutes 30 seconds north latitude and 30 degrees 57 minutes 50 seconds east to the prime meridian with a difference of 27 minutes 9 seconds with Tehran county.

### ***Weather and Climate***

Caspian air mass influences Shiravan through Rudkhaneh-ye Atrak. This air mass raises rainfall and wind blowing at the northwest – southeast direction.

However, intensity of Mediterranean air mass at Shiravan reduces; it is accounted as one of rainfall movements at this region (Armed *et al.*, 2006).

### ***Vernacular Architecture in Shiravan***

Attention to vernacular design at buildings provides more suitable heating conditions and better convenience for the man on one hand and affects energy consumption and saving on the other hand.

The residents in Shiravan in the long lost past lacking modern facilities and means have paid attention to this fact that most of the constructions and designs proposed by the architects are accounted as the professional solution required for study.

This city has faced the problems such as heat at summer, coldness at winter, dry air, wind and cold chill of winter.

Under such circumstances, the residential complexes and other buildings required for the man play a special role as a private shelter, mosque and market against atmospheric factors.

### ***The Considered Site***

With regard to what mentioned on importance and motivation to select the subject of this research, the subject of administrative-commercial complex via sustainable development approach can meet most of the needs and expectations, that the chosen center has appeared as the center for exchange and expansion of social and economic relations.

This center must enable to meet the people's needs including purchase and fulfilment of administrative affairs.

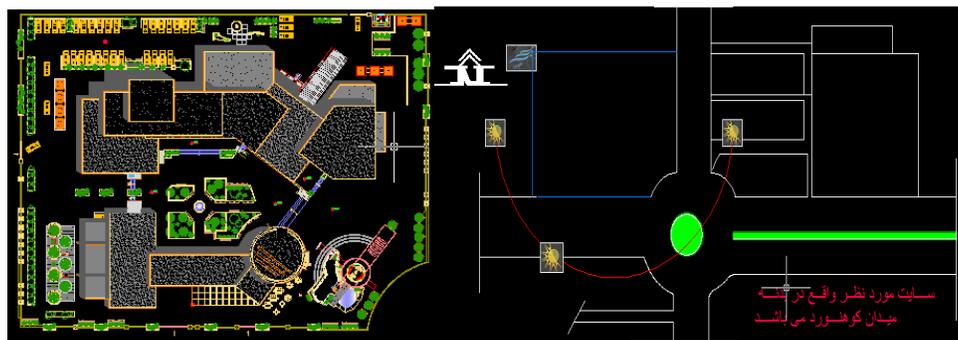
This center can be followed by scientific, artistic and architectural experiences. As Shiravan county has centered at several new cities including Ziarat, Lojli and Ghoshkhaneh on one hand, and it has been assumed as one of the big ancient cities in northern Khorasan with a few thousand years of history and numerous historical works at this city on the other hand, it can meet people's needs at the county and surrounding towns at all the periods of year.

Hence, with regard to this potential, it can consider this center as a multipurpose center with the aim of expanding social and economic relations and spending leisure times and meeting daily needs through a better attitude undergoing creation of architecture qualities at design of administrative-commercial complex using sustainable development.

Hence, with regard to what mentioned above and realization of the potential capabilities at Shiravan County, an administrative-commercial complex via sustainable development at the best position of city can meet most of needs of people at county.

For this, this project has been considered in proximity of Enghelab square. This site is centered at capital of city. The area of this site is about one hectare at the dimension of 100×100 and a height of 25 meter and infrastructure of 20000 m<sup>2</sup> named as Shiravan administrative-commercial complex with the sustainable development.

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## CONCLUSION

Sustainable design at urban structure develops based on three leading principles:

The first principle can be known as saving at consumption of resources, which seek to diminish rate of use of non-renewable reserves at construction and function of urban buildings.

The second principle lies on life cycle that encompasses the environmental outcomes at all the life cycle from the stage of procurement to return to the nature.

The third principle can be known as the human design which has rooted in needing to maintenance of chain elements at biological systems, followed by survival of human life. In this regards, it can assume sustainable architecture and urban design well suited for improvement quality of environments, resulting in increase of productivity and decrease of human's mental pressures and improvement of biological conditions, reminding the concept of social welfare and citizenship. Hence, sustainable urban development can come beneficial in the concepts proposed as follows:

- providing social justice and citizenship
- providing citizenship participation and social correlation
- strategic approach on emergence of sustainable urban development
- providing sustainability patterns from financial trade at the area of a technical knowledge system
- creating the patterns from trade and asset at an international system

## REFERENCES

A summary of the rules and regulations of urbanization and architecture - Department of Urbanization and Architecture -2006.

Commercial center, Translation : Nima Talebian , Mehdi Atashi , Sima Nabizadeh –press of professional artists , 2010

Commercial residential environment-Almas Shargh.

**Farzam Shad (2007)**. *Principles of Planning and Design for Commercial Centers*, (Tehran University Publications).

Formation of architecture in experiences of Iranian architecture in the West - scientific institutes and cultural space – 1994.

Journal of urbanization Technical documents Shirvan - circle municipal building cultural spaces and training , rules and standards / by Ylrza brave - Tehran : Portrait of 1383.

**Kasmaee M (2006)**. *Climate and Architecture*, (publication of Nashr Khak).

Keshtkar et al. development of green roof Architect Magazine Study on Master Plan of Mashhad

**Mofidi Shemirani SM and Eftekhari Moghaddam A (No Date)**. Published in the Journal of city building , No. 12 , p. 15 and 25).

**Mohammed Hasan (2007)**. *Sociology of Architecture*, (Pirzadeh Tehran).

**Mozayeni Tehrani M (1997)**. *Space, Time and Architecture*, (Urban Research Center, Iran).

National Building Regulations, section XV , elevators and escalators- Office of promotion and development of national building regulations -2003.

**Review Article**

**Seyed Mohsen Habibi (2008).** *A Historical Analysis of the Concept of city*, 8<sup>th</sup> edition, (print publications Institute of Tehran University).

studies on phase 1 of Almas Shargh Information Architecture Commercial spaces Best stores of the year  
The detailed design of Shirvan , rules and regulations/ Housing organization of Khorasan , Consulting Engineers Part -2006.

The process of architecture at commercial centers, the number of third -2007 (information architecture) 2008.

*Urban Space in the Historical Context of Iran - Hossein Soltanzadeh*, Third Edition (press of Cultural Researc Bureau) 2006.