THE DEVELOPMENT OF MODERN ARCHITECTURAL PRINCIPLES OF SUSTAINABILITY IN ORDER TO COMPARE IRAN TRADITIONAL ARCHITECTURE WITH FIVE MODERN SUSTAINABLE CITY IN THE WORLD (CASE STUDY: VANCOUVER, COPENHAGEN, OSLO, CURITIBA AND MASDAR)

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ABSTRACT
Industrial revolution in conjunction to over complacency of the modern human has led to irreversible effects on both nature and humans alike. In fact it was after the materialization of such negative effects that humans began to extend more attention to the environment, extinction of some species of animals and various social problems. Accordingly, people took measures to prevent these issues and decided on a establishing a pattern of sustainable urban development. In some developed countries, policy makers have put forth a wide range of solutions for cities to rectify prevailing social problems, to cut down on consumption of energy, etc. In this regard, Iranian architects had devised solutions and strategies in the past. Unfortunately, the use of these traditional patterns and the application of novel solutions being used in other countries are hardly noticeable in the contemporary architecture of Iran. One of the reasons f is the non-existent of a comprehensive set of principles for urban sustainability. This research which has been conducted based on a descriptive-analytical and qualitative method It aims to introduce models, derived from traditional architecture with sustainability issues in modern cities in the world and offering solutions, it has been the strategic direction.. Throughout the process of the current research, first and foremost, the objectives of human communities resorting to sustainable development have been studied in three separate domains, namely environmental, social and economic. Next, five case samples from cities of Vancouver, Copenhagen, Oslo, Curitiba and Masdar City - whose scopes of developments conform to the policies of sustainability approved by "Agenda 21"- have been studied and reviewed in detail based on the assumption that the solutions which were applied to sustainability of the said cities can also be implemented in the Country of Iran as well. Then, reasons and features of sustainability of ancient Iranian cities are considered and afterwards these cities of old Iran are compared to five cases of sustainable cities of the modern world and all common and non-common (new solutions) points pertinent to both cases which have the potential of being implemented in the Country of Iran have been extracted. To be performed traditional Iranian architecture to modern .Finally, some principles and solutions in three fields of environment, society and economy and their related sub-categories have been put forth for permanent stabilization and long term sustainability of contemporary Iranian cities with the objective that such provision are applied in the future by policy makers in their efforts of creating a sustainable pattern of development. ‹, society and economy and their related sub-categories have been put forth for permanent stabilization and long term sustainability of contemporary Iranian cities with the objective that such provision are applied in the future by policy makers in their efforts of creating a sustainable pattern of development.

INTRODUCTION

With the advent of the industrial revolution, human was dominant on nature, and this led to achieve more natural and uncontrolled resources. Now, after two centuries and a half of it, man feels deeply

the lack of non-renewable resources. In fact, the criticisms of the modernism and toward postmodernism, logical transition have benefit for the natural environment. The first time, environmentalists in protests how to deal with nature, leading to serious damage to ecosystems and animal species, man, and they introduce the theme of "sustainability". Sustainable development is review reformist modernism, tradition, and ways of reconciliation between the two. Environmentalists, with the aim of solving the problems of the world, demanding a manipulation of the working environment in a holistic and integrated between of environmental, social and economic factor achieve equilibrium that can achieve superior quality for today and also future. Followed by policies to stabilize the city founded and cities went towards sustainable development. Unfortunately, Iran rich with architectural details and urban sustainability in their past, has not significant new development in the sustainable area. Lack of adequate theoretical basis and integrated solutions in the field of sustainable city can be a reason. The study aims to provide the applicable laws and principles in order to stabilize Iran cities. First, a definition of sustainable development is important and necessary in this chapter. The definitions, objectives and triple areas of it have addressed. After acquiring general knowledge about the subject, specifically the definition of sustainable cities prepared and from sustainable cities in worldwide the guidelines, objectives and prospects of stability of five cities Vancouver, Copenhagen, Oslo, Curitiba and Masdar review in details. In the next section with a quick look at to study the reasons of stability in the past cities, consistency and compliance in how the city dealt with. The comparison done between the listed cities and Ian cities where the intersection between them, solutions in other countries is strategic and in our country have the ability to be applicable and solutions that implement in Iran's traditional architecture, collected. Ultimately, gathering sustainable cities solutions in old Iran and foreign cities studied and the localized solutions, practical solutions to Iran's development with a sustainable approach provided so that the quality of excellence for today's generation and legacy for posterity provided.

THEORETICAL FOUNDATION

The Industrial Revolution with the need to labor, lead to the evacuation of villages and growing population (Hamideh and Poor Mohammad Reza, 2007, 7-6). In the early and middle twentieth century, many books and articles published by number of writers and intellectuals in the period in which concern about than the issue of sustainability and specifically expressed in urban sustainability. Their works, their implicit challenge to the physical conditions of cities and grids that make it as John's graves, human society, the worker class and the issue of poverty in the industrial cities have shown. Following this process, the issue of sustainability in the context of sustainable development in 1978, through a so-called "Land Brandt Report" entitled "Our Common Future" by "World Commission Environment and Development "was officially on the political agenda. Also in 1992, at the UN summit in Rio de Janeiro, Brazil entitled "Rio Earth Summit" by 178 countries signed the document in the same way, as "Agenda 21" was published (Hamideh and Poor Mohammad Reza, 2007, 8-7).

• THE DEFINITION OF SUSTAINABLE DEVELOPMENT

To better understands the concept of a sustainable city must first clear definition of the concept of "sustainable development" presented. Several definitions have proposed for the concept of sustainable development and therefore there is a risk that the ambiguity of the concept exploited (Golkar, 2000, 45). The concept of sustainable development means providing solutions to the traditional pattern of physical, social and economic development, which can cause problems such as the destruction of natural resources, destruction of ecosystems, pollution, excessive increase in population, widespread injustice and poor quality of people life (Mellat Parast, 2009, 122).

The traditional definition of sustainable development is "development without compromising the ability of future generations, in order to meet their needs to act" (Drexhage and Murphy, 2010,). Generally accepted definition of sustainable development as defined in the Brandt Land Reyes Report 1991 observed (Hamideh and Poor Mohammad Reza, 2007, 11): "development which meets the needs of today's generation without limiting the possibilities of future generations is responsible to meet

their needs". In 1991, the United Nations believed sustainable development policy is a policy that is applied as a result of the positive benefits resulting from the consumption of natural resources in the foreseeable future will continue to time (Laghaee and Mohammad Zadeh, 1999). In Conference "URBAN21" in Berlin, Germany in 2000 another definition for sustainable urban development presented: "Promoting quality of life in city in terms of the components of the ecological, cultural, political, social and economic without creating a bottleneck for future generations; bottleneck caused by the decline in natural capital and local debts too "(Hamideh and Poor Mohammad Reza, 2007, 13-12).

SUSTAINABLE DEVELOPMENT GOALS

The main objective of sustainable development is provide basic needs, improve living standards for all, better protecting and managing ecosystems and a safer and more prosperous future (Mellat Parast, 2009, 122). However, it was aware that the implementation of sustainable development models requires major changes in national and international policies (Soflaee, 2004, 62).

The approaches taken at the international level mainly have strategic aspect and without any guidelines and rules will not be implemented at lower levels. Its purpose provided on a national scale at the level of international strategies at the national level, with certain conditions it developed and implemented. Of course, the most important issues and solutions for sustainable development on a local scale arose (Azizi, 2001, 23). Given the importance of local government and local participation categories of citizens in making and implementing decisions, two important factors in achieving development is good (Hamideh and Poor Mohammad Reza, 2007).

PILLARS OF SUSTAINABLE DEVELOPMENT

Sustainable approach to the visual environment of the city in line with sustainable design based on the three pillars of the social structure, stable atmosphere, modeled from nature and use of renewable energy sources. It represents a new position and role, in which appropriate responses given to ecological issues, welfare economic and social life in the context of ecological aesthetics combined (Mofidi Shemirani, Mahdavinejad and Allavi Zadeh, 2009, 78). What the definition implies, the problem of ecology point of interest prevailing in sustainable development and human development pillar of the company. The discussion mainly on the use of natural resources and environment discussed. (Toeed, 2007 observed in Hamideh and Poor Mohammad Reza, 2007, 11). In addition to the environmental aspects, two economic and social dimensions of sustainable development are important issues that have outlined in Agenda 21.

• The need to protect the environment on which life depends on it

• The need for economic development to overcome poverty

• The need for social justice and cultural diversity (Hamideh and Poor Mohammad Reza, 2007, 11)

In principle, the idea is to create a balance between addressing issues related to understanding the essence of three is not meant to be together in the three branches (Drexhage and Murphy, 2010,) each triple principles include subsets summarized in Table 1.

Table 1: Triple Principles of sustainable development and its subsidiaries
Source: (Drexhage and Murphy, 2010)

Environmental sustainability	Social stability	Economic stability
♣ Reduce waste and energy distribution in the environment ♣ Reduction of influences on human health ♣ Use of materials return to the	♣ Environmental justice and equality ♣ Family planning, immigration, poverty and the status of women	Promote neighborhood-based economy Providing immediate conditions for all people in order to achieve the

cycle of nature ♣ Elimination of Toxins ♣ Design and Land Use Management ♣ Transport ♣ Use of materials and energy consumption of buildings and sustainable architecture	♣ Housing	opportunity to create a sustainable living ♣ Implementation of policies and strategies to promote adequate levels of capital ♣ Focus on national development plans and budgets on investment in human

THE DEFINITION OF SUSTAINABLE CITY

In the form of economic, social and environmental components interactions between them together, the ISC (Institute for Sustainable Communities) as detailed and accurate describe sustainable urban communities such as:

"Sustainable communities are communities that value for healthy ecosystems, use resources efficiently and actively work to maintain and develop the local economic base. Unlike traditional approaches to development the social sustainability strategy for the entire community (rather than deprived neighborhoods), rely on the protection of ecosystems, serious and widespread and significant participation, economic self-reliance of citizens (Hamida and Pvrmhmdrza, 2007, 16-15).

Sustainable Cities must:

• Efficient transportation system that encourages people to use public transport and reduce energy consumption in transport;

• urban infrastructure, including water supply systems, sewage systems, waste treatment systems, health centers, educational centers and provide energy and quality of life;

• Low dependence on fossil fuels and increase energy sources like solar and wind power;

• Manner of allocation of land that has pressed and the nearby homes and workspaces commute between work and home dropped;

• Heterogeneous composition of habitable residences of the nobility

• High quality of life beside development and increased desirable urban spaces such as gardens and cultural centers

 In the traditional development system of the city, three aspects of economy, environment and society individually reviewed and decisions about each of these three cases taken in isolation. However, look at these three factors related to urban sustainability and quality of life of citizens, economic strength and health of the environment is equally important (2 2010, REC,).

STUDIES AND SURVEYS

Climate change, population growth, migration to urban areas and lack of resources are all challenges that human civilization faces today and everywhere. To live, in good condition in the 21st century due to the challenges is a critical issue. Cities are the main perpetrators of many of these problems that humanity is facing. 80% of greenhouse gases released into the atmosphere generated in cities. However, cities are main key and open the door to these challenges (Nordic Eight, 2012). World Bank criteria to determine whether the city has undergone sustained development or not? "A stable city must be livable, manageable, competitive and banking transactions are entered in the field". Environmental issues in all four criteria considered, because a city with lack of quality environment is

not livable. The city is not manageable, does not guarantee environmental quality and services necessary to its citizens. City has not a good environment, the ability to attract people to participate in community and urban interactions have not suitable bank does not have enough credit for investment in the environment (Department of Transport and Environment Affairs, 2003).

In Vancouver, Copenhagen, Denmark, Oslo, Norway, Curitiba, Brazil and Masdar of United Arab Emirates Arabic in order to achieve sustainability important steps taken. In the following ways, that these cities have taken to achieve stability evaluated.

• VANCOUVER, CANADA

Vancouver is a city about 560 thousand inhabitants and an area of approximately 1,067 square kilometers, regardless Stanley Park which is about 3.9 kilometers. Vancouver is located in the Northwest of British Columbia territories and has surrounded on three sides by water. The city is located on the western side of the Atlantic (2, nd, Brightbill and Powers). In the 2010, scoping "the greenest city in the world in 2020" conducted for Vancouver (Greenest City Action Team, 2012). The city plans to achieve its target for the "Greenest City Action Plan 2020" (Greenest City Action Team, nd). The progress and results of the program every two years, a report made public. The greenest city in the world project began in the spring of 2011 for action. Table 2 challenges, strategies, the outcome of this city have investigated.

Table 2: Challenges, Solutions, Consequences Sustainable city Vancouver
Source: Greenest City Action Team, 2014

Challenge	Solution	Consequences
Green Economy	♣ Increase the collective consciousness toward local food and green ♣ Increase green design ♣ Support local farmers, local grocery stores and vendors ♣ Setting up businesses related to green transport ♣ Increased investment on infrastructure for electric cars	♣ 19% increase in green jobs in 2013 than in 2010
Climate Management	♣ Boot produce energy from methane fermentation of municipal solid waste (NEU) ♣ Physical and social strengthening flood control system ♣ Orientation towards the use of electricity rather than fossil fuels	♣ decrease of 6% in 2013 compared to 2007 greenhouse gas emissions
Green Buildings	♣ Implementation of green buildings ♣ Improvement of existing buildings ♣ Allocate part of the revenue of rental buildings to equip them with new technologies	♣ independent of fossil fuels increased by 3% Buildings
Zero waste	♣ Recycling cigarette for the first time in the world ♣ Dry waste collection in four categories: glass, metal, paper, plastic	♣ 12% reduction of dry waste per person in 2013 than in 2008 due to burn or bury it.
Access to nature	♣ Ensuring each citizen's residence is located 5 minutes from parks, paths and green spaces ♣ Providing appropriate to increase the diversity of animal species ♣ Policy to help city trees	♣ Location% being 7/92 of citizens in a 5-minute parks, paths and green spaces ♣ 400.23 planting trees from 2010 to 2013

Green transport	♣ Increase of walking and ridding bicycle ♣ Increase pedestrian safety ♣ Improving the safety, comfort and psychological main traffic junctions ♣ Investment in public transport infrastructure and electric cars ♣ Increase in rental cars ♣ The use of rechargeable cars ♣ Planning transport policy of the city from 2010 to 2040	♣ increase of 4% intercity trips by public transport, bicycle and on foot
The least impact on the environment	♣ Annual holding of thousands gathering in parks and green spaces for public support ♣ Supporting research projects associated with sustainability ♣ Use of researchers associated with the sustainable city in practical activities and decisions of the city ♣ Build shopping centers and second-hand equipment ♣ Construction of sustainable buildings, increase recycling, changing the way transport within the city from the private car to public transport and bicycle and pedestrian and ...	♣ reducing 11% influence on the canvas area per person in 2013 than in 2007
Water	♣ Install low-consumption toilets in rented buildings ♣ Implementation of pilot projects on restaurants and offices as the most widely parts of the city ♣ Education with the latest training equipment available in the market with the aim of increasing efficiency ♣ The collection and purification of water in half a year ♣ Increase public awareness of the competition and ...	♣ reduce water consumption by 33% per person ♣ to or better than the standards of the World Health Organization
Air	♣ Prohibit the use of coal in the industrial centers ♣ Impose stringent standards for wood heating ♣ Doubling infrastructure for electric vehicles	World Health Organization
Local food	♣ VIK established as a kitchen for student support and research related to food and cooking local food economy ♣ Support for the project from local foods owners to advertise and sell their products in parks, beaches and ... ♣ Awareness to different groups associated with the consumption of healthy food and a place for a healthy society	♣ increase of at least 30% related to local food centers

• CITY OF COPENHAGEN OF DENMARK

Copenhagen with an estimated population of 570 million is the capital and most populous city in Denmark. It expected that by 2025 the population grew 100 thousand. It covers an area of approximately 88 thousand square kilometers has been varied topography. Copenhagen seeks to demonstrate to the world that with the progress, development and improve living standards by reducing carbon dioxide emissions is possible. The city plans to 2025 as the world's first carbon-neutral capital account.

"Copenhagen plan 2025" is a combination of specific objectives in four areas: energy consumption, energy production, green transport and urban management. It explains how the motivation to achieve a zero-carbon city seen as a force for a better life, innovation, employment and investment used and how the goal of producing carbon without close cooperation between government jobs, schools and citizens of Copenhagen realized. For example, by making this application, CO2 emissions in 2025, to 2.1 million tons, the amount by 2012, 39% reduced. Table 3 challenges, strategies, the outcome of this city have investigated.

Table 3: Challenges, Solutions, Consequences of Sustainable city of Copenhagen
Source: (City Hall City of Copenhagen, 2014)

Challenge	Solution	Consequences
Transport system	♣ A Copenhagen city bike racing with exercise programs and urban design ♣ Create a network of efficient and reliable public transport such as bus, subway and train	♣ Increase the number of cyclists from 35% in 2011 to 50% in 2015 ♣ Reduce the number of 000,351 in 1970 to 900,284 in 2010. Travel by car ♣ 230 million euro reduction in the cost of treatment ♣ Reduce noise, pollution and carbon dioxide emissions ♣ Enhance the credibility of Copenhagen as a city with a high standard of living
Water	♣ Reconstruction of port area ♣ The use of modern sewage systems ♣ Maintenance of irrigated land ♣ Reducing water loss drink	♣ Reproduction market ♣ Local increase in property prices ♣ Return to the area of plant and animal species ♣ Reduce the risk of getting infected port flooding
Energy	♣ Production of methane emitted from the waste heat ♣ Use of renewable energies like biomass, wind energy and thermal energy of the earth instead of fossil fuels ♣ Production of cold seawater	♣ Provide 22% of overall electricity consumption in 2012 through wind turbines ♣ Providing 50% of overall electricity consumption in 2020 and 100% in 2025 through wind turbines ♣ Recycle almost 60% of waste ♣ Reduce dependence on energy imports ♣ Culture in the field of recycling

Because of innovations in the field of ecology and sustainable transport, commitment to a green economy and because of the unique communication strategy, in 2014 the Europe Union Award "Green Capital of Europe "was awarded to Copenhagen, Denmark. Copenhagen from the jury perspective, overcome as a model for sustainable development of the environmental, economic and social issues, can be a model for other cities (European Green Capital, 2014).

• CITY OF OSLO IN NORWAY

Oslo is capital of Norway. At the beginning of 2013, Oslo had 624 thousand and it estimated that by 2030, 200 million people added to the population. Population growth creates many opportunities and at the same time on urban land, infrastructure, the environment and the economy imposes pressures. In 1998, the city of Oslo has comprehensive sustainability policy called "urban ecological plan" formulated. (City Introduction-Oslo, 2014)

"Oslo should consider the growth characteristics of the economic, social, cultural and ecological with regard to the nature protection of this growth known as the capital of sustainable development. We have the city in a better condition than what do we do delivery to the next generation. Oslo is one of the most stable and best environmentalists among the capitals of the world. "

Oslo priorities in the implementation of this theory found in the use of environment-friendly transport systems and renewable energy sources, boost blue-green structure of the city and citizen participation

summarized (Department of Transport and Environment Affairs, 2003). Oslo in order to fulfill its goal to define the challenges and each challenge, ways to convince citizens through state regulation and environmental benefits, economic, social and carry out the actions required cooperation with agencies public, private and people have done. Table 4 challenges, strategies, the outcome of this city have investigated.

Table 4: Challenges, Solutions, Consequences of Sustainable city of Oslo
Source: Nordic Eight, 2012

Challenge	Solution	Consequences
Urban planning	♣ Determine the edge of the forest as a border city ♣ Reinforce the multi-functional strategy ♣ All citizens access to green spaces	♣ protection of natural resources ♣ Strong business development ♣ Development underground
Transport system	Personal vehicles: ♣ Free parking for cars with low carbon production ♣ Reduce double taxation ♣ Funding to fuel infrastructure needed Public Transportation: ♣ Launched five buses with fuel cell ♣ Use of methane produced from food waste and sludge waste water for the bus	Personal vehicles: ♣ There are 500.3 electric car ♣ 400 charging stations for electric vehicles, with a view to installing 100 charging stations per year Public Transportation: ♣ 60% renewable energy, public transport ♣ growing share of the remaining 40% in the low emission / zero pollution
Street light	♣ Ability to turn on, off or dim each lamp ♣ adjust the brightness according to weather conditions by sending information to the central control unit ♣ Replacement of traditional bulbs with LED Display	♣ 62% -52% energy saving ♣ installation of intelligent LED 000.20 in 2013

Oslo in 2003 on "election of the sustainable cities of Europe" organized by the Union of Europe allocated award "European Sustainable City" to themselves. Activities, progress and continuous commitment of the city in order to fulfill the key dimensions of sustainable development with innovation and creativity drew campaign attention to it (Mega, 2005).

• **THE CITY OF CURITIBA IN BRAZIL**

Curitiba's population of 1.9 million in an area of about 430 square kilometers located (Holtzclaw, 2004, 2). According to Louise Haykava as members of the Institute for National Urban Design Curitiba (IPPUC: Institute de Pesquisa e Planejamento Urbano de Curitiba): proposals intended to help the city increase to 3 million Curitiba's population by ensuring quality of life is applicable. The region becomes the industrial hub between 1952 and 1975 by increasing labor migration to find work in the city of Curitiba failed. Due to lack of proper planning and forecasting situations, only a third of the population has facilities such as sewage, electricity, telephone lines and others. The traffic in the city center had become a serious problem. During the bidding mayor of Curitiba's plan for expanding city planners and architects requested that the bidding team led by Jaime Lerner task of planning and implementation of development plan of the city claimed (Mikesh, nd, 1). In Table 5 challenge, strategies, the outcome of this city have investigated.

Table 5: Challenges, Solutions, Consequences of Sustainable city of Curitiba
Source: (Mikesh, n.d) و (Holtzclaw, 2004) و (IPPUC, 2009)

Challenge	Solution	Consequences
Green transport	♣ introduction of BRT system ♣ dedicated bus lane 390, 2000, almost 2.1 million passengers daily moving vehicle	♣ Increase of 4% intercity trips by public transport, bicycle and on foot

	♣ reduce the cost of a bus ticket on weekends, with the aim of encouraging citizens to use public transport ♣ designing pedestrian-oriented downtown ♣ construction of 120 km road bicycle racing	♣ 45% rate increase use of public transport ♣ 3.2% annual increase in the number of passengers on public transport ♣ An annual saving of 27 million liters of fuel
Public security	♣ wrapping coffee shops, restaurants, theaters and other public places around the trails	
Urban planning	♣ road network designed for public transport in preference to consider the route and crushing one-way traffic on the routes ♣ design of concentric road network for the purpose of enabling easy expansion with the development of the city ♣ bus designed for the purpose of convenience, security and save time with regard to disabled users	♣ Tax cuts of $ 200 thousand per kilometer bus line dedicated to the construction of the subway
Housing	♣ sale of the right to housing developers and construction of social housing for the poor ♣ considering the possibility of forming a family needs ♣ not repeat the same module and designed as social housing	
Zero waste	♣ Dry waste collection from homes in four categories: paper, glass, metal, plastic ♣ Increased community awareness with free education ♣ Exchange that designs green	♣ 70% of household waste recycling ♣ Maintain daily 1,200 trees by recycling paper ♣ Get bus tickets or food waste for recycling from low-income families
Social development	♣ implement street children	♣ Cash and food in exchange for doing simple tasks like gardening and other jobs defined by children in some industrial, commercial or institute

• MASDAR CITY UAE ARABIC

Masdar City in the heart of OPEC countries, 30 kilometers east of the capital of the Arabic Emirates (Abu Dhabi), is located. Masdar City development project by Foster and Partners for 40 thousand inhabitants and 50 thousand passengers per day with a total area of 6 million square meters has been designed (Roseta and Karayianni, 2011). The project aim is combines technology updated with traditional Arabic design and planning principles based on the priority use of renewable energy and environmentally friendly solutions for the oil to form a community with the aim of producing non-carbon and waste. "We should not rely on oil as the only source of national funding. We need to expand their sources of income and economic projects so that the reassuring a free life, stable and great for the people "(Masdar A Mubadala Company, 2013).

Perhaps this word belongs to Sheikh Zayed founder, the Arabic UAE, the cornerstone of today's approach to sustainability in urban planning and issues related to it. Masdar project is a multi-purpose project of the Abu Dhabi government, with the aim of promoting the development of technology and solutions in the commercial sector and the development of renewable and alternative energy become a hub for research and development and display the energy technologies of the future. This approach is based sustainable energy trading, carbon management and water conservation technology, centered on the foundation of human, economic, technological and infrastructure. Since the source is located on

the world solar, belt, solar energy, is a key industry in the city (ibid.). Program metropolis has an important role in the success of Masdar City to achieve its sustainability goals, the main stages of the metropolis are as follows:

Table 6: Challenges, Solutions, Consequences of Sustainable city of Masdar
Source: (Mubadala Company, 2013)

Challenge	Solution	Consequences
Energy	Use of photovoltaic panels Convert human waste into an energy source Orientation of the urban network and buildings ♣ Feasibility of ground source and heat energy as heat energy	♣ achieving 7% renewable energy in 2020 ♣ attract the least amount of solar energy ♣ Increase the cool night ♣ concentrating solar power generation capacity of 100 MW ♣ hydrogen energy production of 500 MW
Integration	♣ Vicinity of all walks of life, including work, leisure and location	reduce the need to use vehicles
Transport	Designing urban spaces with the ability to walk ♣ Quick personal rapid transport system (PRT) with electricity	♣ not produce CO2
Dynamics of the city	♣ Importance of the space between the buildings	♣ encourage people to use outdoors
Pedestrian-oriented	The use of narrow streets ♣ Sidewalks shadow	♣ encourage people to walk

Construction started in this city in 2008 and the first phase completed in 2013. During construction and then the city of Masdar become a city with clean technology businesses, policy makers, industry experts and researchers alluring (Ibid). Achieve the ambitious goals of Masdar due to the economic crisis in the world, to what is planned, needed to more time. However, already in the city, examples of the use of materials to save money offered. Masdar Institute in collaboration with the University of Massachusetts (MIT), creative people attracting with the aim of research on sustainable technology (MRS Bulletin, 2013). Masdar City is committed to using renewable energy technologies. City stops create carbon, does not produce waste, one hundred percent of its energy from renewable sources is used, the world's greenest commercial buildings, and vehicles that use fossil fuels they do not travel in the city permission. Planners, underground transport system has designed so that the streets were empty of cars (International Energy Agency, 2009). Masdar City policy makers and planners are hoping to reduce the amount of carbon emissions and produce less waste in the city among the world's sustainable cities (MRS Bulletin, 2013).

"By examining actions taken by policymaker's stable five-city study, it can be active and practical solutions to achieve sustainability in the categories climate management, planning and urban design, transportation, urban construction, social development, water and health policy and put public health. Each of the above mentioned activities to improve cities on economic issues, social and environmental involved in sustainability. With regard to the progress of cities in reducing energy consumption can be considered sustainable in the city as part of their solutions as a strategic solutions in the field of sustainable building in Iran. The important point is this each city should pay attention to the needs, geographical and cultural conditions and other factors, policies and programs unique to each develop a sustainability index. That is why in the face of the same issue in two different cities, the way things used to be different".

SUSTAINABLE DEVELOPMENT IN IRAN

The movement towards stabilization in Iran should be noted that this movement should the community and according to habits, lifestyle and cultural values of society (Armaghan and Gorgi,

2009, 2). As in traditional architecture based on the interactions of the components originated were the principles and rules based on these partnerships were formed in cities and buildings. The Iranian people in the past with the engagement and participation in municipal affairs with reducing energy consumption in buildings in the city were trying to stabilize the city. Where time to reach its goal to have verified solutions that given in Table 7 guidelines. However, gradually with the passage of time and lack of cooperation among the people, slightly solutions colored.

Table7: Challenges, Solutions, Consequences of Sustainable city of Iran
Source: writer

Challenge	Solution	Consequences
Cities in the region	City in complete agreement with the environment in the region	Appropriate response to the climatic conditions of the region, taking into account local features, reducing the risk of damaging the canvas area
Urban development	A dual function: to create new neighborhoods and areas, restoration of existing urban fabric	Reduce costs, reduce the consumption of materials associated with history and culture, using available resources, linking tissue
Physical boundaries	The city has a delimited physical	Focused services, easy access, trips within the city less, reducing seize natural resources for horizontal expansion of the city
City Services	An emphasis on easy access to utilities	Encourage citizens to use municipal services for more spending for private facilities, reduction of urban movements, reduce energy consumption, reduce pollution
Urban centers	Focus on the center of the city set as the Civic Center and as an informal arena for public gatherings	Create a sense of belonging to the Union and to create a sense of place, creating a sense of space,
Public spaces	The emphasis on public spaces, especially in the scale area	Create a sense of place, a sense of belonging to the space, creating a sense of life in local communities, injecting life into neighborhoods, reducing the risk of crime in the neighborhood
User	Mixing a variety of applications such as commercial facilities, recreational, cultural and residential units on the side	Reducing urban movements, reduce energy consumption, reduce pollution, save time
Green spaces	The emphasis on green construction, protection of open spaces, according to the semantic properties of nature	Develop a sense of respect for nature, people, content, significance of the built environment, cultural sensitivity to environmental issues, according to the material properties of nature,
Environmental design	Coordinated by relying on modern design criteria, emphasizing beauty	Create a sense of place, increase the visibility aesthetic citizens,
The participation of residents	Contact significant level of involvement of residents in planning and management	Create a sense of space, create a sense of responsibility for urban shortcomings and defects, to consider the needs, expectations and aspirations of users
Community Relations	The importance of life in local communities, according to the needs and the roots of social relations in the framework of the city and individual buildings	Compatibility of users due to the flexibility, enhance knowledge and expectations of citizens

Housing	Model combines housing, affordable housing for all, climatic design, use of materials, according to the concepts of maintainability, serviceability, simplicity and ...	Compatibility with the surrounding housing, the heir, the use of safe, healthy and native materials, the use of existing technology, accountability and feasibility of operations, increase the life of the building, reducing the possibility of the creation of slums and shanty towns, reducing the risk of crime, reduce costs, people
Traditional structures	Maintain and strengthen traditional structures, according to the building's historic value	1) reduce costs, boost local economy 2)
Ecological	Emphasis on the use of culture and vernacular architecture and local materials	Avoid frivolity, conserve resources, reduce costs, taking into account local features
Urban hierarchy	Observing the principle of hierarchy in the spatial structure of the city and the neighborhood and the access and distribution utilities	Create a sense of place, addressable and urban spaces, creating a sense of space

DISCUSSION AND ANALYSIS

Research suggests that the ideas and principles of contemporary theories of urban native city, there are countless similarities (Habibi, Tahsilldar and Poor Mohammad Reza, 2011, 1). Some of these principles presented in the following common principles taken from the study of five cities. (Comparison of these principles has done in Table 8). It noted that Iran in his native city is stable and repeat it according to the changing requirements of time is pointless. Extraction of these features in order to achieves the essence of urban needs today in Iran. Understanding the common causes has deep understanding of the principles of the Iranian culture and way of life is associated with, although some of them forgotten. They have in their daily lives. All of the information injected in the city today. This explored in future studies and practical experiences resulting in the municipal administration.

Table 8: Compare the principles of sustainable urbanization in the cities and foreign study
Source: * (Habibi, Tahsilldar and Poor Mohammad Reza, 2011, 14 Armaghan and Gorgi 2009, 18)

Challenge	Principles of sustainable urbanization native Iran *	Common principles of Sustainable Cities native Iran and principles derived from the study of five cities **	The principles of sustainable cities in the study of native Iran, there are five cities **
Cities in the region	City in complete agreement with the environment in the region	•	
Urban development	A dual function: to create new neighborhoods and areas, restoration of existing urban fabric	•	
Physical boundaries	The city has a delimited physical	•	
City Services	An emphasis on easy access to utilities	•	
Urban centers	Focus on the center of the city set as the Civic Center and as an informal arena for public gatherings	•	
Public spaces	The emphasis on public spaces, especially in the scale area		•

User	Mixing a variety of applications such as commercial facilities, recreational, cultural and residential units on the side	•	
Green spaces	The emphasis on green construction, protection of open spaces, according to the semantic properties of nature	•	
Environmental design	Coordinated by relying on modern design criteria, emphasizing beauty	•	
The participation of residents	Contact significant level of involvement of residents in planning and management		•
Community Relations	The importance of life in local communities, according to the needs and the roots of social relations in the framework of the city and individual buildings		•
Housing	Model combines housing, affordable housing for all, climatic design, use of materials, according to the concepts of maintainability, serviceability, simplicity and ...	•	
Traditional structures	Maintain and strengthen traditional structures, according to the building's historic value		•
Ecological	Emphasis on the use of culture and vernacular architecture and local materials		•
Urban hierarchy	Observing the principle of hierarchy in the spatial structure of the city and the neighborhood and the access and distribution utilities		•

CONCLUSIONS AND STABILIZATION SOLUTIONS IN IRAN TODAY'S CITY

Today, after a long time resulting from the excesses of the Industrial Revolution, humankind desperately needs to get back to nature feel. He is now trying to turn to modern technology to reduce greenhouse gas emissions, use of renewable sources of energy and prevent climate change and global warming step process. International organizations that seek without risk in the ability of future generations to meet their own needs walk. Governments, businesses and citizens over the past twenty years, sustainable development as the main conductor and the advances in this field have accepted. Many countries around the world have signed the document, sustainable development, each according to its own terms at the national level in different fields, in line with sustainable development strategies and have implemented. Although the environment is a significant part of the problem of sustainable development into account, the economic and social dimensions of the issue of significant global decision-making bodies to achieve clean, free of poverty and justice-oriented. In order to achieve higher goals, officials and citizens in every city committed most basic key role.

In many cities and developed countries, take effective measures to achieve sustainability and can clearly positive effect on the natural environment, economic and social communities seen. Return humans to the lap of Mother Nature, the relative social equality and save costs, all show a healthy life, something that clearly found on Iranian territory. One glance at the past in Iran as well as the coordination and adaptation of these cities with their natural environment understand. What is certain is that a practical approach to the fundamentals and basic concepts in the field is sustainable development reflecting based on sustainable thinking applied in the developed societies of today and

combines it with experiences of the people of this country in order to achieve the Iranian steady steps. According to what said, some cities move towards sustainability solutions that considered and expressed below in Table 9. These solutions have a significant subset of management, planning and urban design, transportation, construction, urban construction, social development, and water and health policy in relation to their community. As mentioned earlier, each of these solutions can be three categories of environment, society and economy and society play a key role healthier and higher quality of life to the citizens.

Table9: Principles and The resulting sentences from stability studies for today Iranian cities
Source: writer

Challenge	Stability solution for today Iranian cities
Climate Management	♣ Use of renewable energies like biomass, wind energy and geothermal energy instead of fossil fuels ♣ Boot produce energy from methane fermentation of municipal solid waste (NEU) ♣ Use of photovoltaic panels ♣ Orientation towards the use of electricity rather than fossil fuels ♣ Physical and social strengthening flood control system ♣ Dry waste collection and recycling in the home ♣ Build shopping centers and second-hand equipment ♣ Production of cold seawater ♣ Replacement of traditional bulbs with LED Display ♣ Ability to turn on, off or dimming each street lamps due to weather conditions ♣ Increased community awareness with free education ♣ Exchange that designs green ♣ Orientation of the urban network and buildings suitable for solar radiation
Urban planning	♣ Planning for urban transport policy from one to three decades earlier ♣ Use of researchers associated with the sustainable city in practical activities and decisions of the City ♣ Reinforce the multi-functional strategy ♣ City in complete agreement with the environment in the region ♣ Determining the boundaries of the city and preserving the compactness of the urban fabric ♣ Principle of hierarchy in the spatial structure of the city and the neighborhood and the access and distribution utilities ♣ Vicinity of all walks of life, including work, leisure and location ♣ Emphasis on easy access to utilities ♣ Focus on the center of the city set as the Civic Center and as an informal arena for public gatherings ♣ Design allows easy expansion with the development of road networks with the aim ♣ Design of road networks, the public transport route in preference and crushing one-way traffic on the routes ♣ Improving the safety, comfort and psychological main traffic junctions ♣ Consider people with disabilities in the design of urban spaces ♣ Ensuring each citizen Location Located near the park, or garden path ♣ Providing appropriate to increase the diversity of animal species ♣ Preserve existing trees and their protection ♣ Protect open spaces ♣ According to the semantic properties of nature and a sense of respect for it ♣ Traditional tissue reconstruction city ♣ Contact a significant level of involvement of residents in planning and management ♣ Importance of the space between the buildings ♣ Designing urban spaces with the ability to walk

	♣ Increase of walking and bike racing ♣ Increase pedestrian safety ♣ Wrapping coffee shops, restaurants, theaters and other public places around the trails to increase the psychological security ♣ The use of narrow streets and in the shade for hot areas ♣ Increase up businesses related to green transport
Transportation	Public Transportation: ♣ Investment in public transport infrastructure and electric cars ♣ Increase in rental cars ♣ Create a network of efficient and reliable public transport such as bus, subway, train and BRT ♣ Set up public transport vehicles such as buses with fuel cell or methane emitted from food waste and sludge ♣ Reduce the cost of a bus ticket on weekends, with the aim of encouraging citizens to use public transport Personal vehicles: ♣ Free parking for cars with low carbon production ♣ Reduce double taxation ♣ Funding to fuel infrastructure needed ♣ Quick personal rapid transport system (PRT) with electricity
Green building	♣ Implementation of a mix of housing ♣ Climatic design ♣ The use of local materials ♣ According to the concepts of maintainability, serviceability, simplicity and ... ♣ Improvement of existing buildings ♣ Allocate part of the revenue of rental buildings to equip them with new technologies ♣ Install low-consumption toilets in rented buildings ♣ The use of modern sewage systems ♣ Implementation of pilot projects and research on restaurants and offices as the most widely parts of the city ♣ To maintain and strengthen traditional structures ♣ According to the monuments of historical value ♣ Emphasis on the use of culture and vernacular architecture
Social development	♣ Construction of social housing for the poor ♣ Considering the possibility of forming social housing needs ♣ Not repeat the same module and designed as social housing ♣ Implement support for low-income people, particularly street children ♣ The importance of life in local communities, according to the needs and the roots of social relations in the framework of the city and individual buildings
Water consumption	♣ Maintenance of ground water resources ♣ Rainwater collection and purification in half a year ♣ Education Training plumber with the latest equipment on the market to increase efficiency ♣ Increase public awareness to reduce the waste of drinking water and non-drinking competitions
Community health	♣ Prohibit the use of coal in the industrial centers ♣ Strict standards for heating equipment ♣ Supporting research related to food and local food economy ♣ Support for the project from local foods owners to advertise and sell their products in parks, beaches and ... ♣ Awareness to different groups associated with the consumption of healthy food and a place for a healthy society ♣ Increase the collective consciousness toward local food and green ♣ Support local farmers, local grocery stores and vendors

As mentioned above, some of these measures are on the stabilization strategies in Iran. With respect and cooperation, officials hope the project and urban policy research done a little step in improving the current situation in Iran and increase the quality of life of citizens. It also provides solutions to architects, engineers, contractors... use the infrastructure of cities and monuments, and the country is gradually approaching sustainable cities.

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