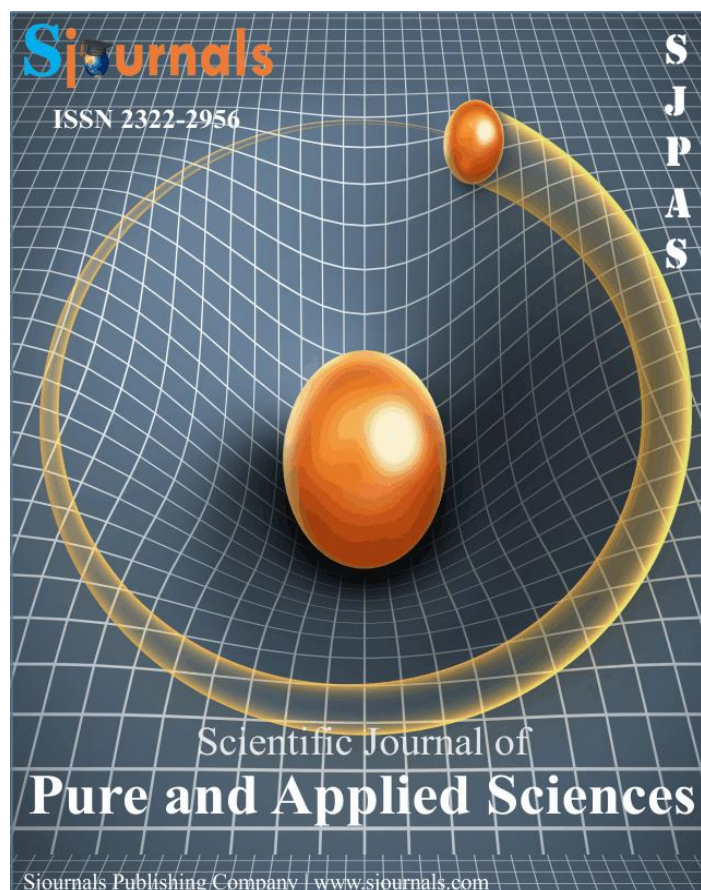


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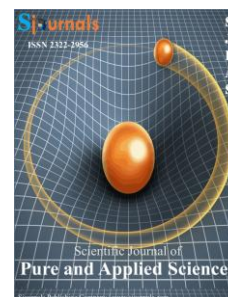
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Review article

Review the HSE-related programs in several cities of the world

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ABSTRACT

Joining cities to sustainable cities is one of the most important objectives of municipality of the world. Around the world, many efforts are done to select and use the appropriate tools for achieving sustainable development. The aim of this study is investigating HSE plans and programs of the major cities and comparing with each other. Accordingly, HSE plans of ten large cities namely Vancouver, Munich, Sydney, London, Stockholm, Toronto, New York, Abu Dhabi, Moscow, Tehran were investigated. Comparing results the HSE management plans and programs in various cities are shown that most urban activities are focused on health, safety and environmental issues individually. Meanwhile in Tehran, established HSE management system is balanced to all health, safety and environmental issues.

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1. Introduction

Joining cities to sustainable cities is one of the most important objectives of municipality of the world. Around the world, many efforts are done to select and use the appropriate tools for achieving sustainable development.

The appropriate tool for establishing sustainability is based on indexes which their progressive realization provides favorable conditions. One of the tools to achieve sustainable urban development is establishing the health, safety and environment management system (HSE-MS). This system is a road map for organizations and has multiple elements (Ghalibaf, 2009).

In 1984 Shell began to manage safety in companies and organizations with the new rules in this field. This leads to significant reductions in accidents in the second half of the 80s. After occurrence of major accidents, safety was increasingly considered. Then with the development of systemic thinking, aspects of safety management developed to health, safety and environment management system in the early 1990s. This management model is shown in Figure1 (OPG, 1984; Farshad et al., 2006; Alizadeh, 2015). In this study, HSE plans and programs of the major cities have been investigated and compared with each other.

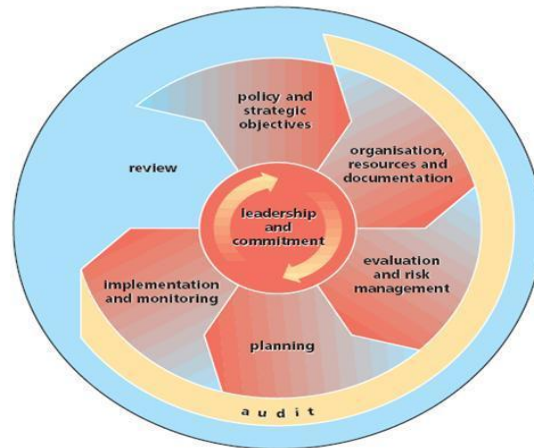


Fig. 1. HSE Management System Model (OPG 1984).

2. Vancouver comprehensive plan

Vancouver ultimate goal and vision is moving towards 100% renewable energies and become the greenest city in the world to 2050. This ambitious goal is resulted in a detailed and comprehensive program called "Action Plan for Vancouver". Following the comprehensive plan to promote green energy for the city other complementary program was prepared to other relevant ancillary operations, such as creating a comprehensive program to control food waste, increasing farmers' markets and urban gardens and 3200 green jobs creation since 2010. To achieve the ultimate objective (become the greenest city in the world) must seek the radical solutions. For example, a high proportion of urban pollution and greenhouse gas emissions that is a big problem in recent decades in human society are related to transportation of fossil fuels are improper and unprincipled. Therefore, an important part of the programs are associated with fossil fuel consumption and replace it with renewable fuels (Vancouver, 2013).

3. Munich city programs

According to projections, the growth of the city of Munich and the surrounding towns will be increasingly high in the next few years. As a result, urban mobile structures can impact the city and its people. So according to these limits and to optimize the growth and progress should present a program that can use all of the future city capacities. One of the most important proposed programs of Munich to prevent environmental damage and social development is promoting the walking culture and using the light means of transportation such as bicycles. Economic planning of this plan is calculated and applied with exact certainty. These activities towards the promotion of walking are to be implemented in five parts. The five parts are:

1. Improved social durability
2. Improved sidewalks connections
3. Pedestrians

4. Promoting the better cooperation on transport neighborhoods
5. Factors Affecting mobility of people using mobility management (Munich, 2013)

4. Sydney city programs

City of Sydney is a completely operational and technical city and has series of natural attractions for tourism and the potential for increasing development. The city to increase its productivity uses the full potential of urban. The planning rule, fire safety, food safety, noise and other forms of pollution, public health and safety requirements relating to animals are the requirements and provisions of this city (Sydney, 2014).

5. London city programs

City of London is one of the largest and most well known cities that have potential for growing. The city is the capital of England and is important and effective city. The city managers for using the sources should develop and implement a series of programs in collaboration with the people. London planned target is protection of environmental and its historical heritage. The next step is decision-making, planning and policy-making in different fields including draft local plan, nuclear strategy, planning completed documents, review of community infrastructure, statement of community involvement, local development plan (London, 2009).

6. Stockholm city program

Sweden has 290 municipalities which geographically cover the whole country. Each municipality has an elected council which is responsible for collecting income tax and provider of public services such as schools servants, children, and aged care, municipal services, housing, cultural activities and leisure. Stockholm, with 900,000 inhabitants, is the largest city in Sweden. The Supreme Council of the City of Stockholm is responsible for the decision making in Stockholm. Many activities are carried out in the form of administrative or corporate in Stockholm municipality. In the city a decentralized work model is presented to citizens could be involved in care for children and elderly (Stockholm, 2015).

7. Programs in Toronto

City of Toronto is committed to promoting mental health and mental health in the workplace. Helpful guidelines, self-assessment tool and resource for employees and supervisors in the workplace are designed properly. Programs are designed in such a way that workers could identify and evaluate risks and use appropriate control measures to minimize or eliminate the risks. City of Toronto is committed to minimize the risks and prevention of musculoskeletal disorders to all members of the public service and uses all his strength to access this aim. Union of health and safety management as a priority was formed in 2006 and began its work. The main objective of the Union is continuous improvement of occupational safety and health to achieve the zero injuries and occupational accidents (Toronto, 2006)

8. Programs in New York city

Across New York City the occupational safety and health units are responsible for monitoring the occupational safety and health issues of organizations associated with the municipality. These units are conducting inspections and training to reduce risks, accidents and injuries and occupational diseases. In accordance with accepted safety rules throughout the city, Article XIV (Occupational Safety and Health), safety and health programs are implementing in each municipality. Occupational health and safety units carry out the following measures (NewYork, 2015):

- Employees training
- Inspections
- Contribute to the promotion of technical and safety levels
- Monitoring the health

Health and safety policies of New York City are as follow:

- Recording and reporting occupational injuries and diseases of employees
- A summary of occupational injuries and diseases

9. Abu Dhabi programs

Increasing HSE standards to achieve the best level of environment, health and safety on construction sites in Abu Dhabi is a very necessary step. Abu Dhabi Municipality invited the all offices consultants involved in the construction of buildings to follow the safety and hygiene rules. All Contractors shall prepare and submit documents of Health, Safety and Environment (HSE) in their projects. It is essential that the HSE plans must be approved by the Consultants. HSE plan must be added to the contract. Providing permits to start construction and infrastructure work is necessary. Another important topic is risk management, including risk identification, risk assessment and risk control. Other notable item is waste management that includes adequate control measures for collection and disposal of waste accordance with separation principles (Ghalibaf, 2009).

10. Moscow city programs

Providing high-quality drinking water to the residents is a very valuable service of Moscow. Daily five million gallons of water is treated. Also a variety of water sampling and testing is done frequently and the results will be compared with drinking water standards. All treatment plants are using the strong filters and complex disinfectant processes to treat drinking water. Receiving the environmental certification is an effort for quality assurance which has been done primarily in respect to water, water treatment, office buildings and waste(Moscow, 2015).

11. Programs in Tehran

In Tehran in line with the visions of 20-year-old of Islamic Republic of Iran in 1404 (2026), the need for the establishment of HSE management system by the decision of the City Council of Tehran was notified. For the purpose of implementing this legislation, the mayor of Tehran issued the policy of health, safety and environment management system to deputies, councilants, mayors of twenty-two municipalities, General Manager and Managing Director staff and affiliated companies depend on the municipality (Ghalibaf, 2009).

12. Overall comparing the HSE programs in the mentioned cities

Comparing results the HSE management plans and programs in various cities are shown in Table 1. As can be seen most urban activities are focused on health, safety and environmental issues individually. Meanwhile in Tehran, established HSE management system is balanced to all health, safety and environmental issues.

Table 1
Compared HSE management plans and programs in various cities.

No.	City	HSE management programs focus
1	Vancouver	<ul style="list-style-type: none"> • Promotion the city green energies • Control of food waste, increasing farmers' markets and urban gardens and green 3200 jobs creation from 2010
2	Munich	<ul style="list-style-type: none"> • Improving the durability social • Improving the sidewalks connections • Improving the pedestrian safety • Promotion the better cooperation on transport neighborhoods • Improving mobility factors influencing the behavior of people with mobility management
3	Sydney	<ul style="list-style-type: none"> • Fire Safety • Food safety • Attention to noise and other forms of pollution, public health

4	London	<ul style="list-style-type: none"> • Conservation of cultural heritage • Sustainability • Recycling of wastes • Construction waste management and environmental enhancement
5	Stockholm	<ul style="list-style-type: none"> • Take care of the elderly or children • Improving the participation of citizens
6	Toronto	<ul style="list-style-type: none"> • Minimizing the risks and prevention of musculoskeletal disorders • Providing occupational safety and health and continuous improvement
7	New York	<ul style="list-style-type: none"> • Staff training • Inspection • Contribute to the promotion of technical and safety • Monitoring the Health
8	Abu Dhabi	<ul style="list-style-type: none"> • Increasing the HSE standards to achieve the best level of environment, health and safety on construction sites • Identifying hazards, assess risks and determine risk control measures • Addressing the issue of waste management
9	Moscow	<ul style="list-style-type: none"> • Performing the daily operations, collection of hazardous waste • Periodic inspections according to the regulations of noise, air, water, etc. • Raising the awareness about the environment
10	Tehran	<ul style="list-style-type: none"> • Establishment of HSE Management System

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