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A Proposed framework for introducing mechanisms for the Egyptian tax system to encourage and develop investment in green architecture

Omar Ahmed Sabry Mohamed Obaid Mansour, A general director of the Egyptian Tax Authority

And a member of the tax appeal committees at the Ministry of Finance  
Advisor to the Egyptian Association of Public Finance and Taxes

#### Abstract

This study aim to develop a proposed framework for the Egyptian tax system to encourage investment in green architecture and the development the current ones, considering that any tax system is not based on the principle of collection tax only in order to cover the public expenditure of the state in which the system is located. So its social, environmental and non-environmental impact on the Egyptian tax system has not stopped to play its role in the environment, as it does not include any mechanisms that help to reduce environmental pollutants and the continuous waste of natural resources, which the green architecture contributes to achieve directly and indirectly through its principles, as well as what could achieve from comfort, vitality of environmental, and mental health in the Egyptian housing which reflect positive effects on the Egyptian man in his daily life, and then on the overall development, as the human being is one of its main pillars.

However, the Egyptian tax system was free of any mechanisms that encourage investment in green architecture and the development of the contents thereof, due its limits. Therefore, the study focused on the concept of the tax system, the elements of the good tax system, the concept of green architecture, the most important principles and the most important examples of green architecture , and then ended with the development of a proposed framework for mechanisms within the tax system, which will contribute to the encouragement and development of investment in green architecture, and motivate the public that accompanies the Egyptian tax system in the performance of its environmental role.

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إطار مقترح لطرح آليات للنظام الضريبي المصري لتشجيع  
وتنمية الاستثمار في العمارة الخضراء

عمر أحمد صبري محمد عبيد منصور، مدير عام بمصلحة الضرائب المصرية  
و عضو لجان الطعن الضريبي بوزارة المالية  
ومستشار الجمعية المصرية للمالية العامة والضرائب

### المستخلص

تهدف هذه الدراسة إلى وضع إطار مقترح للنظام الضريبي المصري في تشجيع الاستثمار في العمارة الخضراء وتنمية الحالي منها باعتبار أن أي نظام ضريبي أصبح لا يستند على مبدأ الجباية فقط بهدف تغطية النفقات العامة للدولة التي يقع فيها هذا النظام، بل تطور وتعاطم دوره في تحقيق أغراض اقتصادية واجتماعية وبيئية متعددة غير أثر النظام الضريبي المصري لم يراوح مكانه عن أداء دوره في البيئة، حيث لا يتضمن أية آليات تساعد في الحد من الملوثات البيئية، والحد من النزيف المستمر في المواد الطبيعية، وهو ما تساهم في تحقيقه سواء بشكل مباشر وغير مباشر العمارة الخضراء من خلال المبادئ التي تقوم عليها فضلاً عما تحققه من راحة وحيوية وصحة بيئية نفسه في المسكن المصري بما ينعكس من آثار إيجابية على الإنسان المصري في حياته اليومية، ومن ثم على التنمية بوجه عام، والذي يعد للإنسان أحد أعمدها الرئيسية.

ومع ذلك فإن النظام الضريبي المصري جاء خلواً من أي آليات تعمل على تشجيع الاستثمار في العمارة الخضراء وتنمية المتواجد منها برغم محدوديتها لذلك فإن الدراسة ركزت بداءة على مفهوم النظام الضريبي ومقومات النظام الضريبي الجيد ومفهوم العمارة الخضراء، وأهم المبادئ القائمة عليها، وأهم الأمثلة العالمية للعمارة الخضراء، ثم انتهاءً بوضع إطار مقترح لآليات داخل النظام الضريبي بما يساهم في تشجيع وتنمية الاستثمار في العمارة الخضراء، وتحريك الجمهور الذي يصاحب النظام الضريبي المصري في أداء دوره البيئي.

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## **Introduction**

The successive voices that claim for reducing the environmental effects of various human activities, waste and pollutants and the preservation of the natural resource base for future generations have increased. As a result, the urban sectors of this age are no longer isolated from the urgent environmental issues that have begun to threaten the world, and captured the attention of the world. These sectors on one hand, are considered the major consumers of natural resources such as land, materials, water and energy, on the other hand, the large and complex construction and building industry produces huge amounts of noise, pollution and solid waste, and the problem of wasting energy and water remain one of the most important environmental problems of buildings because of its continuity and sustainability during the period of operation of the building. Therefore, and for these reasons and others, and the growth of public awareness about the environmental impacts associated with construction activities, some specialists noted that the main challenge facing the urban sectors at this time is the ability to meet its obligations and to play its role of development towards achieving the concepts of green architecture (Majida Obeid: 2010).

Others added that environmental control and management of urban projects would be one of the most important competitive criteria in these sectors in the 21st century. Hence, in developed and industrial countries, new concepts and methods such as " Sustainable design and Green Architecture, that were not previously common in the spread and implementation of projects has emerged. All these concepts reflect the growing concern of the urban sectors with the issues of economic development related to the protection of the environment, reduction of energy consumption, the optimal consumption of natural resources and mainly depend on renewable sources of energy " Renewable Sources of energy (Shadia Barakat, Nemat Nazmy, 2013)

In order to achieve the concept of green architecture, we must have the means to achieve this goal. Perhaps one of the most important means to achieve this goal is the utilize tax policy tools, and despite the importance role that the tax system may play in the field of

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green architecture, we found that the laws of imposing taxes, directly and indirectly, did not consider in its texts the environmental issues, especially the negative effects of urban projects and failed to adopt development and the achievement of green architecture.

### **Problems of the research**

The problem of the research lies in the limited view of the Egyptian tax system as a tool for collecting taxes to cover the public expenditure of the state. Despite the growing role of the tax system, in the year of 2005 starting from the introduction of the income tax law No. 91 2005 till now, in achieving economic and social objectives, it has been far from performing any environmental role such as encouraging and developing investment in green architecture, as its implementation will lead eventually to reduce environmental pollutants and depletion of natural resources.

### **Aims of the research:**

The research aims to the following:

- 1- Introduce and present an intellectual framework for the appropriate tax system.
- 2- Recognize the concept of green architecture and the principles underlying it.
- 3- Identify the most successful models in the field of green architecture.
- 4- Develop a proposed framework for a tax system to encourage and develop investment in green architecture.

### **Importance of the research:**

The importance of research is represented in the necessity of the Egyptian tax system to contribute in promotion and development of investment in green architecture through introducing some mechanisms such as tax incentives, rules and bases of appropriate accounting and simplifying the procedures of examining and tax imposition and collection and training workers and increase their awareness of the importance of this type of investment as the Egyptian tax system currently free from such mechanisms.

### **Hypothesis of the research:**

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The search assumes that there is a significant relationship between the mechanisms of the tax system and the encouragement and development of investment in green architecture.

**Research Methodology:**

The researcher will adopt the following methodology:

- 1- The deductive approach: Using the theoretical method of collecting information about the nature of the problem in question, as intellectual and methodical issues of the thesis will be subjected to research through previous information came in books, researches and previous studies.
- 2- Inductive Approach: Through the use of survey lists and the selection of a random sample of real estate investment companies, legal accountants and the Egyptian Tax Authority staff in order to show the extent to which the detailed tax treatment can contribute to the promotion and development of real estate investment and directing this investment towards investment in green architecture.

**Previous Studies**

1- **Mohamed Ali Al-Falafi (2015)**

The study aimed to reach a methodology for the application of green architecture and economic sustainability in low cost housing buildings in Egypt. The result was an analytical study used by the architecture to apply it in low cost housing buildings in Egypt, then design a proposed prototype software program use solar cells to generate electricity.

2- **Ahmed Taha Mohamed (2013):**

This study aimed to focus on the applications of green architecture in the Arab region. The result was that ignoring green architecture in the Arab region may lead to lack of utilization of natural potentials in the Arab region.

- 1- Design buildings to achieve the highest rates of exploitation of natural sources of energy from the sun and wind in order to provide nature lighting and ventilation and reduce the impact of climatic conditions and rationalize electric power.
- 2- Rationalize the quantities of water consumed through designing a drainage system for sinks and showers in buildings separately so that it can be reused in irrigating green spaces.

3- **Shahd Abdulreda Mousa (2011)**

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This study aimed to focus on the increasing needs of energy in view of the increase in population and consumption. The result showed the necessity to use natural environmental resources treatment by following the principles of green architecture to reduce energy consumption in buildings during the various stages of construction with the least negative impact on the environment

**4- Nazih Abdul maqsoud Mabrouk (2011)**

The study aimed to shed light on the use of tax under the name of green taxes or environmental taxes to make the world more greener and cleaner for use in reducing pollution and preserving the environment.

The results of the study were as follows:

1. Green taxes represent mandatory payments to the government that are not refundable considering that these payments are relevant to the environment.
2. Green taxes include several types, such as fees to cover expenditures and payment taxes and environmental financial government taxes.
- 3 - There are challenges beyond the use of green taxes such as the change the fundamentals and constants and change the status quo and political will.
4. There are groups of developed countries that have used green taxes to fight pollution such as the United States, Switzerland, Denmark, Sweden, the Netherlands, Norway and France. These taxes have greatly succeeded in achieving their goal. These taxes contributed to reduce carbon dioxide emissions and toxic waste production, Nitrogen.
5. The United States of America is the first country in which negotiable licenses are prominent in environmental protection programs alongside green taxes. These licenses are based on a standard level of pollution and a certain amount of pollutant emissions where the Authority issues negotiable permits that entitle the holder to the right of emission of pollutants.

**5- Amaravadee Vinyangkoon study (2012)**

The aim of this study is to focus on the use of methods, materials and effective resources in the design and construction of modern buildings in the United States of America. This may increase the value of green buildings and reduce energy consumption and thus reduce its cost. The study also aimed to study the gap between commercial green buildings and value added, where the impact of energy costs is studied. The value-added gap illustrates the difference between the high value of the building and the costs of energy expenditure. The

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study will work to solve these problems, objectively and generally, by sending study data to specialists in real estate construction.

**Research Plan**

The research is conducted through the following chapters:

**The first chapter:** the concept of the tax system and the elements of the good tax system.

**The second chapter :** The concept of green architecture and the principles based on it.

**The third chapter:** Successful models in some countries of the world.

**The fourth chapter:** the field study of the subject of research

**The fifth chapter :** A proposed framework to establish a tax system helps to encourage and develop investment in green architecture.

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**First chapter**  
**The concept of the tax system and the elements**  
**of a good tax system**

There are many definitions of the tax system in the Arab and foreign literature, some consider that the concept of the tax system ranges from a broad to a narrow concept, but most of them agreed that the tax system is :

A specific set of technical types of the tax (VAT, customs taxes, stamp duty, development fee on the state's financial resources, etc.) that are compatible with the conditions and characteristics of the environment in which they operate, and which constitute integrated tax programs operate in a specific manner through legislation and tax laws along with executive regulations and explanatory notes. These technical images seek to achieve specific objectives that represent the objectives of the tax policy in general and the objectives of the tax system in particular.

**This definition illustrate the following:**

- 1- To choose the technical types of the tax in accordance with the conditions and characteristics of the community that works within their scope, which means that tax system differs from one society to another, according to the different economic, social and political conditions within the community.
- 2- The tax system includes a specific method of work regulated by the legislation and regulations issued, which include, in turn, the tax provisions on the technical types of the selected taxes and provisions governing the administrative bodies responsible for the implementation and implementation of tax policy. The tax policy is the policy that followed by the state to direct its taxes towards certain specific objectives and originated from its general strategy using its public authority, and all possible means and tax administrations currently and predictably necessary to achieve those goals. The tax policy is one of the tools of the state's fiscal policy, Economic Policy, and as the tax system is part of the fiscal policy, which is supposed to be consistent with the general plan of the state, must have strong relations with the economic policy of the state (Yunus Al-Partiq: 2003).

From the previous concept of the tax system., it is clear that the tax system consists of three main components:



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- 1- Specific objectives derived from the objectives of the prevailing tax policy.
  - 2- A collection of integrated technical tax types, which collectively represent the means that achieve desired objectives.
  - 3- a set of legislation and tax laws in addition to some executive regulations and explanatory notes represent a specific way through which the tax system and different authorities operate. (Said Osman: 2008)

**Second: Elements of a good tax system**

These elements are classified into three groups as follows:

- A) Economic elements.
- B) Ideological elements..
- C) Technical elements.

**A) Economic elements.**

The tax system must have several economic elements such as:

1. To reflect the existing economic philosophy of the country with regard to the concepts of production, distribution and consumption.
2. The economic structure and economic conditions prevailing in the country should reflect the tax system. The tax system should be based on the income, production and consumption accounts. It will impose the tax on the most profitable and least harmful activities so that the potential economic returns for economic and social development can be deducted.
3. To take into account the economic, social and political responses in order not to negatively affect productivity, savings and investment incentives.

**B) Ideological elements:**

It is the product of social influences, historical traditions, psychological implications, and the political regime and the ensuing cultural and cultural level of society.

**The features of these elements are as follows:**

1. The tax system always reflects the social structure of the state, because this structure determines the tax resources involved.
2. Historical traditions often make it difficult to introduce amendments or reforms to tax systems.
3. Psychological reactions generated by the tax declaration produced by a new tax or an increase in current tax rates. Thus, it is

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preferable in the beginning, when imposing a new tax, it should be at a low price to avoid protests of financiers.

- 4 - Some customs in some countries prevent the application of some tax provisions.
5. The political system of any State plays an important role in determining its tax system.

### **C) Technical elements.**

The Technical elements of a tax system are illustrated as follows:

- 1 - clarity and accuracy: as the formulation of the tax system is clear and unambiguous, it facilitated the task of both the tax administration and financier, and reduced tax evasion and block the way in front of tax duplication.
- 2 - Flexibility: it means that the tax system can adapt to the change of economic conditions, increase its earnings in periods of prosperity and decrease in periods of recession.
- 3 – Optimal harmony between the quality of direct and indirect taxes.
- 4 - Coordination and integration, which means the formulation of the rules of the system and its accounts based on accounting and tax rules performed through unity either in the measurement of income or in the general outlines of tax rates as well as qualitative and technical integration.
- 5- Tax Awareness: It is the sense that is generated by the taxpayers about the importance of taxes and make them accept to pay them willingly. There is no doubt that the wise behavior of the government and the services received by the individual have a clear impact in raising tax awareness among citizens.
- 6 - Efficiency of the tax system: it means the availability of efficient tax preparation for employees, and simple procedures of imposing tax, appeal and litigation, and that trust prevails between the financiers and the employee of the Tax Authority.
- 7 - Sound scientific bases: This means that the imposition of taxes based on sound and scientific grounds, taking into account the impact of raising prices on the outcome and consistency between the tax system and the branches of other financial systems. (Hassan Mohamed Kamal: 1975).

The tax legislator has adopted several sets of similar tax laws, whereby each group includes tax provisions for a particular type in

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order to achieve equal treatment and a comprehensive view. These taxes are classified according to current legislation into direct taxes and indirect taxes as follows:

**First: Direct taxes:**

Direct taxes are represented as income tax, real estate tax and local taxes according to the following:

**A) Income tax:**

This tax shall be governed by Law No. 91 of 2005 and its amendments, by the Income Tax Law, and imposed on the income of natural persons and profits of legal persons. (Published in the Official newspaper No. 23 (Cont.) on 9<sup>th</sup> of June 2005).

**1. Income tax on natural persons:**

According to the second book of Law No. (91) for the year 2005, the total net income of natural persons residing in Egypt is charged annually for their income in Egypt and consists of the total net income from the following sources:

- Salaries and the like.
- Commercial or industrial activity.
- Income of the free and non-commercial occupations.
- Revenues of real estate wealth (income from rental of furnished apartments and fixed-term rental of buildings).
- Real estate wealth.
- Tax on profits of legal persons:

**2. Tax on profits of legal persons:**

According to the third book of Law No. (91) 2005, imposed on the annual net profits of legal persons whatever their purpose.

**B) The tax on the real estate wealth revenues:**

**1 - Tax on agricultural lands:**

This tax shall be governed by Law No. (113) for the year 1939 and its amendments. It shall be imposed on agricultural lands, whether they are actually cultivated or could be cultivable, it is a judgment tax and is determined and valued every several years and estimated at a percentage of the rental value. (Published in official newspaper No. 118 on 16/10/1939).

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## **2. Tax on built-up property:**

This tax shall be governed by Law No. 196 of 2008 (published in the Official Gazette No. 25 (Repeated (c) on 23/6/2008).

### **C) Localities fees:**

These fees are collected by the local government, which are local fees. The Local Administration Law No. 43 of 1979, as amended, includes the right to impose them and the arrangements for their establishment (published in the Official paper No. 25 of 21/6/1979).

### **Second: indirect taxes:**

#### **Value Added Tax:**

This tax shall be governed by Law No. 67 of 2016 and its amendments and shall apply to all domestic and imported and manufactured goods and services for the purpose of dealing in such goods or performance of these services, except those exempted by special provision. (Published in the Official paper No. 35 (c) on 7/9/2016).

### **B) Customs Tax:**

This tax shall be governed by Law No. (66) for the year 1963, as amended by Law No. 160 of 2000 and its amendments, and shall be imposed on goods imported from abroad except those exempted by a special provision known as the import tax (On 26 June 1963).

### **C) Stamp Duty:**

This tax shall be governed by Law No. (111) of 1980, as amended by Law No. (143) of 2006, these taxes are divided into two types:

- qualitative stamp tax : imposed in a fixed amount regardless of the vessel subject to it.
- Relative stamp tax: imposed by a percentage of the value specified by the law as a tax vessel (published in the Official paper No. 22 (a) on 31/5/1980).

### **D) Entertainment house Tax:**

This tax shall be governed by Law No. (221) of 1951, amended by Law 24 of 1999, and it is imposed on theaters, cinemas and other amusement places and venues, it is between 5% and 30%.

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## **Second Chapter**

### **The concept of green architecture and the principles underlying it**

#### **The concept of green architecture**

Green architecture is defined as: "The process of designing buildings in a manner that respects the environment taking into account the reduction of energy consumption and resources and minimizing the effects of construction and use on the environment and maximizing harmony with nature." (Yahya Waziri, 2007).

#### **Second: Principles of Green Architecture:**

Green architecture represents a highly efficient system that deals with its vital environment with minimal side effects. It relies on environment-friendly construction techniques in materials and energy consumption. Part of it is based on raw materials in construction, and tries to use everything that is surrounding the environment. The other part relies using modern techniques for energy conservation and generation through integrated solutions based on renewable energy sources and nanotechnologies. As a result, the green architecture is based on a set of principles which are:

##### **1. Energy conservation through:**

- Shade care in all parts and components of the building, as the shadow is one of the most important factor contributing to energy saving up to 30%.
- Adding insulating materials to the walls, ceilings and heat-insulating rubber strips on windows, and use nanotechnology in this field.
- depend on resources and renewable energies such as solar energy, wind, waves, waterfalls, biofuels, as the biofuels is the energy derived from living organisms, both plant and animal, as it is a clean fuel whose production depends mainly on conversion of biomass whether in the form of grains and crops or in the form of animal fats.

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## **2. Operating related to the surrounding environment and respect the site:**

The site's respect means that designers use methods and ideas in construction that do not lead to significant changes in the location of this building. If a building is removed, the site will return the same before the building was constructed. The images of this principle are the domes and tents of the nomads. These tents are woven from sheep and camels hair. They are supported and fixed by some wooden poles and ropes only, and when nomads leave for other places seeking for grass to their sheep, we notice no significant changes in the site.

## **3. Adaptation to climate:**

There is always a reciprocal effect relationship between the building and its outer perimeter, and there is an effect of the elements surrounding the building on the formation of the atmosphere of the interior spaces, on the contrary, there is an impact of the operation of the building on the surrounding environment. In case of the building adapt to pressures and climatic problems while at the same time using all the resources of climate and nature, this building can be called a climate-balanced and achieves the thermal comfort of its inhabitants. Thermal comfort is the sense of human comfort in the surrounding atmosphere that allows the human to get rid of the heat and excess moisture, which is constantly produced as a result of biological interaction. Body temperature changes by gaining or losing heat by:

- Contact between body and surrounding surfaces.
- Radiation is the transfer of heat between the body and surrounding surfaces.
- Current Load is the transmission of heat between the body and the surrounding air.
- Evaporation through sweat and breathing accompanied by loss of heat.
- Metabolism and associated energy produced.

## **4- Reduce the use of new resources:**

Applying this principle, designers should consider reducing the use of new resources in designing buildings, and try to construct them in a way to be a source and supplier to other buildings.

Green buildings are high-quality buildings with a longer lifespan, that require lower maintenance costs and their its costs are close to traditional buildings, it is also considered the key to the sustainable development of urban communities.

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### **5- Efficiency of water and internal environment use:**

New Irrigation methods should be used to rationalize irrigation in relation to gardens as well as in homes, kitchens and bathrooms through the use of light sensor mixers, water conservation systems, installation of low-capacity evaporation tanks, and natural lighting within the dwelling should be at least 75% , as the least healthy lighting that a person could live in without being exposed to hazards should not be less than 1000 feet / candle, and this value increases to 2500 feet / candle at peak.

In the light of this, a good design should include:

- Lighting the building parts with natural lighting.
- allocation of premises in the building that man can benefit from the ultraviolet light taking into account the factor of privacy.
- Increase the lighting, natural or industrial, as much as possible, to be both are alike, inside and outside building.
- Allow the sun to penetrate within the building parts at least an hour a day.
- Control the distribution of windows to maintain the privacy factor, so as people don't close " Windows Sled " throughout the day.
- Reduce the colors inside the building, the white and light colors should be dominant.
- Each room should have two windows as possible, distributed on two walls in order to prevent blurring of vision inside the building

### **6. Comprehensive and sustainable design:**

All green architecture principles need to be fully integrated in the process of designing the building or planning the city (Maha Kamel: 2010).

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The third Chapter  
Successful models in some countries of green architecture

**Introduction:**

The United Nations General Assembly in its resolution 63/278 of 22 April 2009, proclaimed April 22 as the International Earth Day of our Mother Earth, which reflects the interdependence of humans.

On 22/4/2014, the United Nations celebrated the International Day of Our Mother Earth under the slogan "Green Cities" and launched a campaign to help cities around the world to become more sustainable and reduce carbon emissions. It focused on three main elements (energy - transport - buildings) To accelerate their transition to clean and healthy cities with a more economically viable future through improvements in the efficiency of investments in renewable technology.

It is important to note the successful models in some countries of green architecture as follows:

**First: The residential complex in Hararime Sustad, Sweden:**  
Hammarby Sjostad, Stockholm, Sweden

Where the call for what is known as green architecture in developed European countries, and was the first official attention at the Stockholm Conference in 1971, which called for the preservation of various elements of the environment.

The Hammarby Sustad project is the largest urban project in Stockholm and is well planned to achieve sustainable construction that accommodates 26,000 people in 11,500 apartments.

The project has achieved the following goals and objectives:

- Reduce emissions by less than 50% of the level of other residential areas.
- Reduce 80% of passengers using public transport.
- Reduce 25% of electricity consumption by using biofuels for cars.
- 60% reduction in water consumption.
- Reduce 40% of the total waste produced and reduce 90% of the waste buried.
- Recycling of solid waste and use it as fertilizer for land cultivation.
- Recycle water from the population.
- Use local materials and choose the best ones in health protection.
- 80% of energy generated from waste to produce biogas.
- Produce 90% of sulfur from the waste and use it as fertilizer for agricultural activities in the region.



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- Provide more than 10,000 apartments for living as well as to work in the region.
  - This model for the integrated environmental cycle to be followed has become known as the Hamarby Environmental Cycle Model that addresses energy, waste, water and wastewater for offices, housing and other businesses.
  - Reduce the amount of heavy metals and other environmentally harmful substances to 50% or less in wastewater from other areas in Stockholm, DC.
  - Collecting rainwater and dealing with the melting of snow from roads and drainage in the drainage channel of the buildings and squares and then treated in special ponds and then discharged in special channels for use in green surfaces and agriculture. (Graphic design / layout, 2007).

**Second: Messiniaja tower model in Kuala Lumpur - Malaysia:**

The tower consists of 15 floors with an area of 2345 square meters, rising on a prominent green garden and topped by a cylinder crown with a sports hall, swimming pool and solar panels. It is a building that adapts to the surrounding environment and is located on a highway leading to Kuala Lumpur Airport. Green agricultural was applied of buildings as follows:

- Respect the site and adapt to the surrounding environment.
- Climate adaptation using the techniques of climate treatment technology in architectural design.
- Spiral green surfaces rising on the front of the building.
- Presence of green sloping areas and slopes in the lower floors to connect nature to the upper floors.
- The presence of submersible windows in the eastern and western façades equipped with sun beams of aluminum.
- Installation of glass walls in the facades that provide natural light for lighting.
- There is a system for collecting rain water on the surface.
- The Messiniaja Tower in Kuala Lumpur is a model of a traditional Malaysian architecture and modern rules in parallel, and as a model of eco-friendly buildings reflects the strong relationship between building, climate and landscaping. (Lina Hamdan: 2010).

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**Third: The model of Masdar City in the United Arab Emirates:**

Masdar City is located near Abu Dhabi airport in the United Arab Emirates, the world's first carbon-free, solar-powered city.

The city takes the green architecture approach by:

1. Reduce the demand and consumption of electricity by 75% of similar buildings.
- 2 – Generate more than 80% of energy consumed in the roofs of the buildings using solar cells.
- 3 - Using air towers to smooth the atmosphere inside the buildings and to expel the air from them.
- 4 - Rationalize water consumption for nearly 50% compared to traditional cities using high efficiency techniques and reuse of wastewater and then used in the irrigation of vegetation.
5. Use traps to store rainwater.
- 6- Recycling waste and planning to reuse 89% of it by 2020.
- 7- Use means of transport free of fossil fuels, using public transport to go to work.
- 8- Use local and sustainable building materials.
- 9- Preserve biodiversity and sea water.
- 10- Reliance on local and sustainable food.
- 11- Preservation of cultural heritage.
- 12- Achieving health and happiness. (The Masdar initiative, 2008)

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## The fourth Chapter

### Field study

In this study, the researcher obtained the opinions of specialized workers in the Egyptian tax Authority, real estate investment companies and through the distribution of random survey forms from the employees of the tax training center, the tax authorities of senior financiers, the investment tax office, tax appeals committees, the survey list divided into a set of questions, some using the five-scale Likert scale:

(Strongly agree – agree - neutral - not agree - strongly disagree).

A key question was left on any proposals that would lead to the activation of the Egyptian tax system to encourage and develop investment in green architecture.

After the responses were received on the survey lists, the lists with no answers were excluded. The percentage on the importance of the vocabulary was used in the survey list or to put the items on the list in order. The correlation factor, and agree and disagree degree was used to reach the best tax incentives from the survey respondents. "Spss " and T "test were used. It was clear through the sample of research that there is clear approval on the importance of the mechanisms of the Egyptian tax system of tax legislation and the rules and foundations of tax accounting and the workers in charge of tax inspection and procedures for checking, imposing and collecting tax to develop investment in green architecture, where the answer was very strong with 76 recurrences of 41.08% and 92 recurrences by 49.72% while the percentage of those who strongly reject the number of respondents is 1.08% 5% by 2.70% while neutrality reached 10 recurrences by 5.4% and to measure the significance of the differences between the research sample and the study society to measure the contribution of the mechanisms of the tax system in the engorgement and development of investment in green architecture

The "T" test was used then calculate the significance of the "T" test on the basis of a significant level less than (50), indicating the significance of the differences between the arithmetic average of the sample of the study, confirming the validity of the study. In green architecture.

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## The Fifth Chapter

### A Proposed framework to activate the tax system in promoting and developing investment in green architecture

In order to enable the Egyptian tax system to be used as a mechanism for achieving green architecture, the following is proposed:

**First: Enforcing environmental tax:**

The imposition of environmental tax creates a constant and continuous commitment to companies to reduce the pollution and waste resulting from their projects, especially the real estate investment companies that build the properties they sell, which produces the largest percentage of natural waste. However, when imposing environmental taxes, the following must be inspected:

1. The objectives of the State and the plans relating to the environmental aspect are clear and specific.
2. The revenues of environmental taxes should be spent on the environmental side only, especially encouraging further establishment of green architecture in all areas.
3. When the environmental tax law is issued, there should be sufficient time between the adoption of the law and its application to the polluting or depleting bodies of the natural materials so that these companies and projects, especially companies and contracting projects to take the necessary steps to adjust its policy

**Second:** the need to reduce or exempt customs duties on machines, equipment and materials used in the designs of green architecture.

**Thirdly,** Apply the method of tax incentives, especially in the field of real estate tax on buildings for the environment by exempting these buildings from the real estate tax or reduce them from other buildings that are not environmentally friendly.

**Fourth:** Reducing the tax rate on construction companies whose activities are based on the construction and building of premises designed as friendly environment outside the new urban communities.

**Fifth:** apply the method of tax exemptions, whether absolute exemption or for a fixed period not less than ten years for companies engaged in activities in the new urban communities related to the design of green architecture, whether through the convergence or manufacture or trade in materials used in the construction of green architecture, construction and building

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industry, commerce or housing, which adopt the principles of green architecture.

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### **Results and recommendations**

From the previous study, it was concluded that the Egyptian tax system in its current form needs different mechanisms to encourage and develop investment in green architecture through the introduction of tax legislation, as well as adopting non-traditional administrative methods that contribute to the encouragement and development of investment in green architecture. The researcher recommends the following:

1. The need to make amendments to the tax laws whether direct or indirect taxes, especially Law No. 91 of 2005, the law on income tax as the most influential law within the framework of the Egyptian tax system to adopt tax incentives that contribute to the encouragement and development of investment in green architecture.
- 2 - Adaptation of the tax system by linking it with the Egyptian Council for Green Building to implement the standards and concepts of green architecture.

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