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ECONOMIC BENEFITS OF SUSTAINABLE PARK: A SOLUTION TO IMPROVE THE CITY'S ENVIRONMENT

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Abstract. Sustainable urban parks have the basis of their sustainable economy by emphasizing the provision of green raw materials in the environment. Because the economy of sustainable parks has an ecological cycle model in which access to raw materials is possible only through production and consumption with recycling. Therefore, more investment should be made in green areas, including sustainable parks and the focus of economic investments should be gradually shifted from costly and destructive industrial sectors to environmentally friendly green sectors that can lead to more economic production at the same time. It is obvious that the implementation of such an economic development model can be easier and less risky in areas that have a greater share of natural capital. For this purpose, this article examines four components of economic and environmental benefits in a sustainable park through factors such as 1- Energy efficiency and reduction of power transmission costs to sustainable parks. 2- Reducing the demand for buying non-sustainable materials in the environment of sustainable urban parks. 3- Reducing the per capita costs of water consumption in sustainable parks. 4- The design of economic planting of plants in the green landscape of the park is discussed.
Keywords: sustainable park, environmental improvement, energy efficiency, sustainable materials, sustainable water consumption, economic coverage of the landscape

DAVAMLI PARKIN İQTİSADİ FAYDALARI: ŞƏHƏRİN ƏTRAF MÜHİTİNİ YAXŞILAŞDIRMAQ ÜÇÜN BİR HƏLL

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Xülasə. Davamlı şəhər parkları ətraf mühitin yaşıl xammalla təmin olunmasını məqsəd qoyaraq, davamlı iqtisadiyyatın əsasını təşkil edir. Çünki dayanıqlı parkların iqtisadiyyatı ekoloji dövriyyə modelinə malikdir ki, burada xammalın əldə oyalnız yenidən emal və istehsal yolu ilə mümkündür. Buna görə də, dayanıqlı lunması parklar da daxil olmaqla yaşıl sahələrə daha çox investisiya qoyulmalıdır. Eyni zamanda iqtisadi investisiyalar tədricən bahalı və dağıdıcı sənaye sektorlarından daha qənaətcil istehsala səbəb ola biləcək ekoloji cəhətdən təmiz yaşıl sektorlara keçməlidir. Aydındır ki, təbii kapitalın daha çox olduğu ərazilərdə iqtisadi inkişafın belə modelinin həyata keçirilməsi daha asan və daha az riskli ola bilər. Bu məqsədlə, bu məqalə aşağıdakı amillərin vasitəsi ilə dayanıqlı parklarda dörd iqtisadi və ekoloji komponent nəzərdən keçirilir: 1-Davamlı Parklarda Enerji Səmərəliliyi və Elektrik enerjisinin Ötürülməsi Xərclərinin azaldılması. 2- Ekoloji cəhətdən təmiz şəhər parklarının mühitində qeyri-ekoloji materialların alınmasına tələbatın azalması. 3- Davamlı parklarda adambaşına düşən su istehlakı xərclərinin azaldılması. 4- Parkın yaşıl landşaftında bitkilərin əkilməsi layihəsi müzakirə olunur.
Açar sözlər: davamlı park, ətraf mühitin yaxşılaşdırılması, enerji səmərəliliyi, davamlı materiallar, davamlı su istehlakı, economic coverage of the landscape

Introduction. What can be clearly understood is the need for a plan and program with sustainable features for spaces with a high rating of popularity such as sustainable parks, which also happen to host the most ecosystem services in the city and it can help and support the sustainable development of the city in achieving goals such as environmental and economic improvement. Urban management requires due to the importance of preserving the environment and the need to use

efficient and strategic management tools for sustainable urban development and in order to prevent and control and reduce the adverse environmental consequences caused by the activities, apply appropriate urban services with a view of continuous improvement [8]. A method that can lead to energy efficiency and reduce the cost of power transmission to sustainable parks, reducing the demand for purchasing non-sustainable materials and materials in the environment of sustainable urban parks, reducing the per capita costs of water consumption in sustainable parks, as well as designing economic planting of plants in the green landscape of sustainable parks [12]. The increase in energy costs and changes in energy consumption needs have caused serious concerns in the economic aspect of cities. Therefore, in order to achieve energy efficiency and reduce power transmission costs in their environment, sustainable parks provide a model for green consumption of city residents by using renewable energy systems in sustainable parks [2]. Sustainable parks do not use non-sustainable materials in their environment due to their sustainable structure. In simpler words, these parks prevent the entry of expensive and non-recyclable materials into their environment by using recyclable and environmentally friendly materials in the construction of buildings and park furniture and graphics. On the other hand, by replacing sustainable materials with non-sustainable materials, they will benefit from lower costs for the restoration and maintenance of the park space. With sustainable drainage and sewage systems in their physical structure, sustainable parks have the possibility to collect and store rainwater and snow, as well as purify and reuse gray water and other things in the park; provide sustainable and non-potable water for irrigation of landscape plants in the park [14]. Economy in multi-purpose sustainable parks with the aim of further and better improvement of the city's environment; Sustainable urban parks have the basis of their sustainable economy by emphasizing the provision of green raw materials in the environment. Because the economy of sustainable parks has an ecological cycle model in which access to raw materials is possible only through production and consumption with recycling [4]. While we see that the usual urban parks, due to having a linear pattern, their production and consumption are based in such a way that by avoiding solid waste, not only have the city's environment been brought under the radius of its pollution, but it has practically lost the possibility of accessing and returning raw materials to its linear pattern. In simpler words, common urban parks produce, consume, and then throw away materials without giving them a chance to return, which means they have closed the window of obtaining raw materials from the environment. In general, what makes the economy of sustainable parks different from the usual city parks, it is that the structure of sustainable urban parks is such that unlike their unstable and traditional model, they benefit from the two-way cooperation and interaction between the economy and the environment [9].

Materials and methods. Environment includes renewable natural resources such as air, water, soil, plants, landscapes, special landscapes and man-made environment including economic, social and cultural and their mutual impact on each other. Sustainable development is development that meets the needs of the current generation of the world, without jeopardizing the ability of future generations to meet their needs. Sustainable development has three main dimensions of economic growth, social justice, and environmental protection, and paying attention to them leads to achieving economic growth (green economy) along with sustainability and preservation of the environment and social justice [17].

Green economy is the result of achieving welfare and social justice along with the significant reduction of environmental and ecological threats. Or in simpler words, economic growth equal to less carbon, consumption of resources with high productivity and social inclusion in line with the environment. The current economic system has extracted most of the non-renewable resources such as oil and minerals from the earth during several decades and to achieve this, it has destroyed and polluted most of the renewable resources such as forests, pastures, rivers, etc [10]. Now, after only a few decades, the extraction of resources has exceeded the limits of nature itself and the discharge of pollution has exceeded the earth's tolerance thresholds. As a result, economic development has faced a gradual deadlock due to the scarcity of primary resources and production inputs, and at the same time, the welfare of the society has also decreased with the financial stagnation ruling the economic

markets. That is why a new thinking called "green economy" has been proposed [15]. Natural resources and ecosystems, including forests, pastures, rivers, seas, plant and animal species, and fertile agricultural lands, are considered as natural capital, and their real economic value should be included in the calculations of the national economy. And based on their principled use and management, increase economic growth, create employment and social welfare. Therefore, more investments should be made gradually in green sectors, including new energy sectors, natural tourism, sustainable and organic agriculture, recycling industries, green buildings and sustainable parks. And the focus of economic investments should be gradually shifted from costly and destructive industrial sectors to environmentally friendly green sectors that can lead to more economic production at the same time. It is obvious that the implementation of such an economic development model can be easier and less risky in areas that have a greater share of natural capital [18].

For this purpose, this article examines the economic benefits of a sustainable park through factors such as 1- Reducing energy consumption costs. 2- Reducing water consumption costs. 3- Reducing maintenance costs of landscape green cover. 4- The use of materials and recyclable materials is discussed in reducing the costs of building sustainable urban parks.

Energy efficiency. Urban management requires considering the importance of preserving the environment and the need to use efficient and strategic management tools for sustainable urban development with the aim of preventing and controlling and reducing adverse environmental consequences caused by activities and apply appropriate urban services with a view of continuous improvement.

Most of the energy consumed in the world is provided by fossil fuels. These fuels contain a variety of toxic and dangerous pollutants that enter the environment and ultimately the human food chain through different ways [1]. Although the environmental effects of the use of fossil fuels on surface water, underground water, soil, air, vegetation, etc. are countless, but the issue of air pollution, greenhouse effects and particles and their cooling effect are more important. It is not possible to maintain and continue the current conditions of life in human society in the future without paying attention to the supply of energy at a reasonable price [22]. The environmental effects associated with any energy production at the current rate are moving towards unacceptable conditions and the harmful environmental effects are expanding widely. Renewable energies, as a source of clean energy and free from any environmental pollution, can play an important role in reducing the emission of polluting gases such as carbon dioxide and other greenhouse gases [3].

The close connection between economic and environmental issues has led to the emergence of new approaches in the field of international environmental law, one of the most obvious of which is the green economy. It is possible to pass the approach of the traditional economy and reach the green economy by observing the principle of fairness and the principle of environmental integration. This means that the traditional economy is mostly based on the excessive use of natural resources and not paying attention to the rights of current and future generations [11]. It is possible to pass the approach of the traditional economy and reach the green economy by observing the principle of fairness and the principle of environmental integration. Investing in renewable resources that are also available locally in many cases can significantly increase energy security along with developmental, economic and financial security. In recent years, various countries, both advanced and developing, have paid much attention to renewable energy and the increase in the price of fossil fuels, environmental considerations, security of energy supply, technological progress and economic justification have mainly determined the future of renewable energy [18]. Renewable energies are basically compatible with nature and keep the environment healthy, and as a result, they can reduce the major emission of greenhouse gases that impose a lot of costs on the society. Therefore, it is necessary to look for an alternative to fossil energy such as renewable energy. Renewable energies (new energies) such as wind energy, solar energy are compatible with nature and do not pollute the environment, and they prevent the major emission of greenhouse gases that impose many costs on the society [13]. Renewable energy sources, especially wind and solar energy, due to their abundance and suitable geographical facilities, they have significant capabilities in producing energy in sustainable parks and

their use can save fossil fuel consumption. By using new energies and sustainable development in the park and harmonizing architecture with the climate, energy consumption can be saved and environmental pollution can be prevented [7]. Today, a sustainable park is recognized as a living organism that is itself a source of energy. In a natural cycle, materials resulting from one process are deposited as data to the next process, and as a result, there is no waste in nature. On the other hand, since the price of non-renewable energy sources has a lot of fluctuations, and in oil-dependent economies, these fluctuations directly enter the society's economy, therefore, it seems that it is possible to reduce the intensity of economic fluctuations and create a more stable economic growth in the society by paying more attention to renewable energies, of course, based on the available capacities in each region [5].

Figure 1. Energy efficiency and reduction of power transmission costs for sustainable parks through solar panels and vertical axis turbines Source: Meg Calkins, the sustainable sites, 2012 [5]

Sustainable water consumption. Harvesting and reusing rainwater for storm water management: Harvesting rainwater, collecting, storing and reusing runoff from impermeable surfaces; Runoff is screened from roofs or other surfaces and filtered into a collection system, such as a rain barrel, tank, dry well, catch basin, or other containment system. The absorbed water is suitable for irrigation or other non-potable uses, such as supplying water for cooling condensers or flushing toilets. In the case of proper filtering and purification, the absorbed water can be used for drinking purposes [21]. The key components of a water harvesting system are catchment basin, filter, tank and distribution system. The challenge facing landscape architects and other designers today is to find ways to maximize environmental benefits. In addition to helping meet a project's water consumption needs, water harvesting can serve as a storm water management strategy. Water quantity benefits can be maximized by releasing captured water before the next storm by applying it to landscaped areas through irrigation systems [16].

Water reuse and recycling: A natural landscape grows only with rainwater, groundwater and condensation (dew) available on site. A sustainable site with established or modified landscape elements must also thrive with only water available on site as a renewable resource—primarily rainwater, but also potentially construction process water, storm water runoff from impervious surfaces, and treated wastewater. Sustainable storm water strategies can help accomplish this as part of an integrated design solution [20]. Green roofs, Biuretention, porous pavement systems, and constructed wetlands can all be designed and engineered to cool and purify water from various sources for use in landscape irrigation, created water features, and other potential uses in a sustainable environment [6]. Water recycling is generally the reuse of harvested rainwater or treated wastewater for various beneficial purposes, including landscape irrigation, created water features and groundwater recharge [14]. It can also be used for construction processes that do not require potable water quality - toilet flushing, washing water, industrial process water and the like. A water reuse strategy involves identifying potential sources of excess water available on-site or from a building

and targeting potential uses for that water, and then designing appropriate methods to collect, treat (if necessary), store, and redistribute and deliver that water to the site [20].

Reservoirs: A tank is a container built to store water for reuse. It can be installed above or below grade- water stored below grade is kept at ground (usually cooler) temperatures, which can be a benefit to water quality [19]. A tank can be designed to be filled with gravity-fed or pumped water directed from the roof or other surfaces. There are many production tanks of various sizes - above ground they are usually metal, concrete or masonry. Underlays are usually fiberglass or metal [4].

Figure 2. Underground tank systems collect roof runoff for watering plants
Source: Meg Calkins, the sustainable sites, 2012 [6]

Modified tanks: Water storage can be created simply below paved surfaces in combination with a porous/infiltrating pavement system by adding depth to open-grade gravel or a dedicated structural reservoir system with liner. Tanks can also be artistically integrated into the building or site architecture [6].

Water Redistribution and Delivery: Recycled water should be distributed where it is needed on site. Ideally, this would be done with pumps powered by renewable energy sources with minimal capital and long-term operating costs, although this will vary greatly depending on the use. An efficient irrigation system is used to distribute water in the landscape [14].

Efficient irrigation: An efficient irrigation system is one that is designed and maintained using water from renewable or surplus sources and minimal or no non-renewable energy to maintain the health of the landscape it serves without wasting water. The general approach of the landscape in a site is to plan the same amount of the site with little vegetation and no irrigation according to the intended use, and then plan other parts of the landscape taking into account renewable or surplus water sources. Once the landscape elements of the site as a whole are planned and the parts of the landscape that may need or benefit from supplemental water are identified, a way to deliver that water to the landscape can be considered [21].

Types of irrigation systems: Many conventional landscape irrigation systems, for example lawns, ornamental gardens, use significantly more water than required. Some of this water waste comes from systems that are simply not maintained - there are leaks, either too much water gravity flows into certain parts of the landscape, leaving other areas too dry or parts of the system are damaged or broken [7]. Most traditional irrigation systems use a series of ground jets, sprays, or rotating heads to spread water over a portion of the landscape. The heads are laid out to cover every part of the scene with minimal overlap. While ground irrigation systems are relatively low cost, they provide significant opportunity for water evaporation and surface water runoff. High-efficiency irrigation systems use a combination of water distribution and delivery techniques to target supplemental water to vegetation areas based on actual need [19]. Therefore, they minimize water consumption and maximize plant health. One of the alternatives is to use a drip irrigation system. It consists of a series of small-diameter hoses that are distributed by the irrigation district to the part of

the landscape that needs additional water, usually activated when needed and determined by water sensors. Plants need water in their root zone and this method delivers a very controlled amount of water directly to the root zone, thus using a fraction of the water used by a conventional ground irrigation system. Drip irrigation systems must also be properly maintained in order to maintain their performance [8].

A sustainable created water feature is one that is created and maintained only with a positive impact on the ecology and hydrology of the site and can be maintained with excess water available on site. Commonly constructed water features absorb or receive makeup water from potable sources, diverted natural streams or waterways, or water extracted from aquifers, all of which can deplete non-renewable resources or otherwise affect the local ecology. On the other hand, a sustainable water feature with minimal or no make-up water from drinking sources or depleting other natural surface or subsurface water sources is healthy and vital. The best way to do this is to use storm water harvested or diverted from less permeable portions of a site as part of a site's sustainable water strategy. The primary goal of efficient water features is to minimize potable water use for amenity waters created in the landscape, while providing other benefits and values [10].

Figure 3. Types of irrigation systems for plants
Source: Sustainable Landscape Construction, Kim Sorvig, J. William Thompson, 2018 [10]

Economic coverage of landscape.Vegetation to preserve energy and modify the microclimate: If properly placed, vegetation can shade adjacent buildings or site spaces and can act as windbreaks or funnels to direct favorable breezes. Therefore, vegetation can be an effective passive energy saving strategy for adjacent buildings and can change the microclimate of the outdoor spaces of the site to increase human comfort. When vegetation is placed as a screen in a linear or mass formation, it can be very effective in reducing the effects of wind [15]. It can direct the prevailing wind upwards and, if tall enough, over a sheltered structure. In temperate climates, evergreen species have the greatest windbreak potential due to the density of branches and leaves throughout the year. However, deciduous vegetation also has a mitigating effect. Vegetation should be located in the direct path of the prevailing wind, adjacent to but not directly next to the protected structure. Space must be provided between the windbreak and the building to provide insulation, "dead air" or air that does not move [2]. Vegetation should be placed at least half the height away from the surface of the structure at maturity to provide sufficient space for dead air. Additionally, vegetation is most effective when arranged in rows or clumps perpendicular to the prevailing wind. Vegetation can also be used to funnel the desired air flow [13]. Instead of placing the vegetation perpendicular to the prevailing air flow, it is placed parallel to or in an almost funnel pattern to catch the wind and direct it where you want it to go. Funneling the desired airflow can not only direct the air but also increase the air velocity. Vegetation can act as both a windbreak for buildings and a funnel to absorb and direct breezes into buildings if desired. In temperate and cold climates, evergreen trees can protect the north and northwest of the building from the prevailing winter winds. Trees can also be arranged to direct prevailing summer winds toward the building for passive cooling. It has been used long before vegetation for the shade it can provide [20]. When vegetation is placed on the south and west sides of structures (in the Northern Hemisphere), it can screen a structure away from the sun during the hottest part of the day; less screening is usually needed on north or east faces. Shade is directly

proportional to the amount of sun intercepted - larger, wider and taller species provide more useful shade [11]. Deciduous species are often used for shade because of the broader and larger leaf structure typically found in deciduous vegetation. Additionally, deciduous vegetation can appropriately provide seasonal shade, screening during summer when sunlight is most intense, and leaf shedding and unfolding during winter when beneficial heating from the sun is desired. Careful planting design around buildings can reduce building energy consumption and provide comfortable outdoor spaces for year- round occupancy [5].

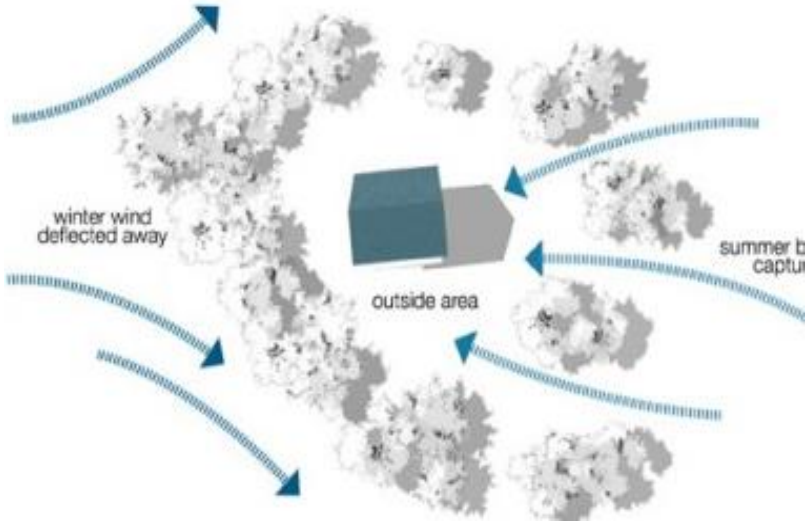

Figure 4. Vegetation can act as both a windbreak for buildings and a funnel to capture and direct breezes into buildings when desired. In temperate and cold climates, evergreen trees can offer protection on the north and northwest of the building from prevailing winter winds
Source: Meg Calkins, the sustainable sites, 2012 [5]

Sustainable plant production: Choosing the right varieties includes choosing varieties from plant producers who promote sustainable practices. Crop production is a resource-intensive process that requires large amounts of energy, water, nutrients, and space. Choosing varieties from producers who have demonstrated conservation of resources sends the message to all producers that sustainable practices are desirable [6].

The optimal production methods are:

1. Reducing the use of coal and other non-renewable resources for cultivation and the cultivation environment or the production of pots.
2. Reduction of runoff from irrigation.
3. Minimizing energy consumption, including reducing greenhouse gas emissions from on-site equipment, and using renewable energy sources.
4. Using an integrated pest management program.
5. Minimum use of potable water, reuse of gray water.

Vegetation in the urban environment: Plants can be used effectively in the urban environment to provide some of the most critical ecosystem services. It has been estimated that properly spaced street trees can reduce heating and cooling costs for some structures per year [19].

Vegetation for food production: Gardening for food production has long been a central part of our relationship with vegetation. We are completely dependent on vegetation for our physical health, nutrition and well-being [9].

Community gardening and edible landscapes have one obvious feature: Horticulture and edible landscapes can be strategies to reduce energy use, reduce carbon footprints, strengthen communities, and reconnect people with the landscape at a high level. For this purpose, they are created for sites where site users can benefit from this type of planting plans. Edible landscapes

benefit humans only where a population or individual monitors the vegetation to harvest the crop at the right time [2].

Sustainable materials: Over the past 100 years, the building materials industry has undergone major changes. There is a shift from local use of materials to large-scale centralized production and global distribution. From low processed materials to highly processed materials and from simple materials to engineered composites, it is a collection of mixed materials and the liberal use of chemical additives to create a wide range of properties to materials and products. Sometimes this change can conflict with environmental and human health concerns [22]. The processes of extracting, processing and distributing materials directly affect ecosystems and their ability to provide sustainable ecosystem services. Building materials of the 21st century must respond to an entirely different set of forces- global climate change, air pollution, rising fuel costs, environmental degradation, and biodiversity loss [5]. These forces shape the rapidly growing sustainable development movement and construction industry and they will need significant changes in the materials industry. These changes may include closed-loop material production systems that eliminate waste. Using renewable energy sources for production, processing finishing and transportation activities significantly reduces toxic chemicals and human and environmental exposures from construction [17]. Material use and disposal Emphasis on minimally processed, local or regional materials and greater reuse of site structures on site. Appropriate materials for building a sustainable site vary based on impact priorities, regional issues, project budgets and performance requirements. Some emphasize materials that conserve resources by reusing without remanufacturing, with high durability, or by closing the loops on materials with high recycled content and manufacturer take back programs [13]. Others place great emphasis on low product toxicity and life cycle greenhouse gas emissions, while others may consider low environmental impact or water conservation as the highest priority. With this wide variety of preferences comes a wider variety of "correct answers". Portland cement concrete may seem like a "green" material to those who value durability or locally produced materials as a priority; while it may be dismissed by those concerned about the global warming effects of producing high-energy materials. Composite lumber (a combination of recycled plastic and wood fibers) appears to be a good alternative to wood lumber for those who care about the environmental impact of transparent forestry practices but it may be rejected by those involved in material recycling loop issues due to its mixed material composition. One product may have global warming effects while another product may contain a known human carcinogen, and a third product may require large amounts of fossil fuel energy to produce, but may be more durable. Materials and products for sustainable sites are those that minimize resource use, have low environmental impacts, have little or no human and environmental health risks, and contribute to sustainable site strategies [4].

Figure 5. Using local materials such as stone and wood in the design of sustainable parks
Source: Meg Calkins, the sustainable sites, 2012 [4]

Materials for sustainable sites are defined as.
Materials or products that minimize the use of resources:
1. Products that use less materials.
2. Structures reused on site.
3. Reclaimed materials and products.
4. Reprocessed materials.
5. Materials with post-consumer recycled content.
6. Materials with recycled content before consumption.
7. Products made from agricultural waste.
8. Materials or products with reuse potential.
9. Materials or products with the ability to recycle.
10. Structures designed for deconstruction.
11. Renewable materials.
12. Materials with fast renewal capability.
13. Durable materials and products.
14. Materials or products of manufacturers with product recall programs.

Materials or products with low environmental impact:
1. Sustainably harvested or extracted materials.
2. Minimally processed ingredients.
3. Low-polluting materials in extraction, manufacture, use or disposal.
4. Low consumption materials in extraction, manufacturing, use or disposal.
5. Low carbon materials in extraction, manufacture, use or disposal.
6. Materials made with energy from renewable sources (such as wind, sun).
7. Local material [14].

Materials or products that contribute to sustainable website design strategies:
1. Products that promote the hydrologic health of a site by reducing the amount of stormwater runoff and improving hydrologic quality.
2. Products that reduce the urban heat island effect.
3. Products that reduce energy consumption in site operations.
4. Products that reduce the water consumption of site operations [7].

Life cycle of building materials and products: The typical life cycle of materials and products begins with the extraction of raw materials from the earth and ends with the disposal of waste materials to the earth or recycling into other materials. Most material life cycle flows are fairly linear, where materials move through the cycle once and then are disposed of. However, some are circular with product reuse, component remanufacturing and material recycling [19].

Construction, use and maintenance: The use and maintenance phase can be important when considering the environmental and human health impacts of building materials and products, as they tend to be used for very long periods of time. Product durability is therefore one of the most important concerns because the longer the installation, the less need there is for replacement, which uses more resources and produces more waste. It is important to match the expected life of the product with the expected life of the site or structure and ensure that the product can be reused or recycled after its useful life. Plastics, wood preservatives, adhesives, finishes, sealants, and cleaners used in construction and maintenance can contain hazardous chemicals. Steps should be taken to specify materials and products that require minimal maintenance chemicals, or low VOC and low toxicity cleaners and sealers [3].

Site and area assessment for site construction materials and products.Resource conservation assessment:
1. Reuse of in-situ structure: Identify and inventory structures, including infrastructure on the site that can be rehabilitated and reused on site. Structural reuse can affect the site design, so a detailed inventory of all structures should be done prior to initial design.

2. Recycled materials on site: Identification and inventory of structures, including substructures, that can be deconstructed and members used in their entirety. Involving a contractor can help identify materials for reuse [20].
3. Ground cleaning materials reclaimed on site: Identify and catalog vegetation, soil, or rock that can be reclaimed during site preparation and reused in new construction.
4. Reprocessed materials on site: Identify existing structures on the site that can be removed and materials processed for reuse in new site construction.
5. Earth cleaning materials, again on site: Identify cleaning materials that can be reprocessed for on-site use [3].

Resource efficiency: Efficient use of resources may be the single most important strategy in determining building materials and products for sustainable sites. Using less resources can reduce environmental, economic and human health effects, including habitat change caused by drilling and harvesting and waste, air pollution and energy consumption caused by production. It can also reduce the amount of waste sent to the landfill. Proponents of closed-loop systems advocate eliminating waste either by not producing it or by using it as "feed" for new products and processes [14].
Reuse of materials: A major resource conservation strategy is to reuse materials in new site construction. Common reusable materials include metals, timber, concrete units, bricks, stone, and organic land clearing materials such as plants and soil. Using recycled materials, also called salvaged materials, in new site construction has many potential benefits [19]. Materials are diverted from landfills, and virgin resources and energy are conserved that are used to produce new materials. Recycled materials are sometimes unique and one of a kind. Finally, the use of recycled materials can sometimes be cost-effective, if material procurement costs and transportation and landfill costs are saved on or near the site [2].

Locating recycled materials: Recycled materials can be obtained from the site, other construction sites, online material exchanges, or local salvage stores. Supplying materials locally can be economically and environmentally cost-effective, as both landfill costs and material purchase and transportation costs are saved [7].

Discussion and results. What can guide us in summarizing the upcoming discussion will be the answer to the factors that are from the four key axes with the themes of reducing energy consumption costs, reducing water consumption costs, reducing the costs of maintaining the green cover of the landscape and using recyclable materials in reducing the costs of building sustainable parks to improve the city's environment has been discussed [12].

The economic benefits of sustainable parks are aimed at reducing environmental risks, ecological deficiencies and sustainable development, without destroying and polluting the environment, and are also closely related to the ecological economy. The green economy is formed based on public and private investments that lead to the reduction of carbon dioxide emissions and other pollutants, the increase of energy and resource efficiency, and the prevention of the destruction of biodiversity and ecosystems.

The sustainable park system has been designed and planned for several functions in order to simultaneously support environmental, economic, social and aesthetic values in the city site. In the first component, it should be acknowledged that the maximum use of renewable resources such as sun and wind in the environment of sustainable parks will depend on the amount of resources available in each urban area. With all these attributes, sustainable urban parks have the possibility to generate energy in their environment through the installation of photovoltaic panels and wind generators, while saving the costs of constructing power transmission lines and reducing cable consumption and also to increase the usage of these clean and green energies in the environment of the park site significantly [21].

Investing in renewable resources that are also available locally in many cases can significantly increase energy security along with developmental, economic and financial security. In recent years, various countries, both advanced and developing, have paid much attention to renewable energy and the increase in the price of fossil fuels, environmental considerations, security of energy supply

technological progress and economic justification have mainly determined the future of renewable energy. Renewable energies are basically compatible with nature and keep the environment healthy and as a result, they can reduce the major emission of greenhouse gases that impose a lot of costs on the society. Therefore, it is necessary to look for an alternative to fossil energy such as renewable energy. Renewable energies (new energies) such as wind energy, solar energy are compatible with nature and do not pollute the environment, and they prevent the major emission of greenhouse gases that impose many costs on the society [8].

In summary, the top three characteristics of renewable energy are: Renewable energy sources have a long life and natural cycles, and unlike non-renewable energy sources, such as fossil fuels, they are not exhaustible, and this issue guarantees the continuity of energy consumption for future generations.

Renewable energy sources, especially wind and solar energy, have significant capabilities in energy production due to their abundance and suitable geographical facilities, and their use can save fossil fuel consumption. The exclusive use of power plants that work with fossil fuels will create concentration in energy production areas. If using renewable energy sources, it is easy to produce energy in any place with suitable geographical conditions, and this will lead to decentralized energy production in different regions.

In the second component of a sustainable park with landscape elements created or modified, it should be used only with available water as a renewable source, mainly rainwater, but also potentially construction process water, storm runoff from impervious surfaces and treated gray water in to be available. Water recycling is generally the reuse of harvested rainwater or treated gray water for various beneficial purposes, including landscape irrigation, established water features, and groundwater recharge. It can also be used for construction processes that do not require potable water quality, toilet flushing, washing water and industrial process water and the like [13].

Purification and reuse of excess water available on the site through a sustainable water transfer system can create considerable environmental and economic benefits, which are as follows:

1. Maintaining water quality with minimum use of drinking water in fountains of sustainable urban parks.
2. No adverse impact on surface (ponds and wetlands) and subsurface (aquifers) water sources.
3. On-site water management through rainwater harvesting and reuse.
4. The design of the water transfer system and its budget based on coordination with the overall approach of landscape site.

In the third component, when the vegetation is selected according to the conditions of the park site, the landscape capacity of the park is preserved and restored for a wide range of ecosystem services. Suitable vegetation by reducing the local heat island effect, reducing storm water runoff, improving water quality, improving air quality, especially by reducing surface ozone and finally improving visual and physical access to the green space of the site, has been able to create positive effects on the value of property and human health. Based on this, if the selection of vegetation, the appropriateness of the plant with the location and its programmatic needs is not observed, then we will see that each of the native and non-native vegetation planted due to incompatibility with the site conditions will bring unstable results to the city [6].

Regardless of the importance of plant compatibility with the conditions of a sustainable park site, using the design of sustainable planting of plants, especially native plants, can fulfill other important goals as follows:

1. Saving resources and preserving natural habitats.
2. Reducing costs related to heating and cooling buildings through the correct and accurate placement of plants in the landscape of the park.
3. Reducing the use of fertilizers and chemicals; the use of appropriate and compatible plants for a region and the use of appropriate planning and design for the landscape, in addition to reducing water consumption, also reduces the consumption of fertilizers and chemical poisons. In this case, in addition to reducing the costs related to these materials, the amount of leaching and penetration of these materials into the underground water table and soil will also be reduced.

4. Reducing time and costs related to landscape maintenance.
5. Reducing water consumption required by the landscape and reducing costs related to it.

In the fourth component, reuse of materials and materials; A major resource conservation strategy is the reuse of materials in site construction. The easiest way to reduce the adverse effects of materials is to obtain them locally. Carrying one ton of material one mile typically uses between 2,000 and 6,000 BTUs. Air transportation can easily consume twenty times that amount of energy. The fuel consumption to transport materials over long distances can be greater than the energy used to mine and craft the items. Long-distance transportation is not only expensive for energy, but fuel combustion is the main source of pollution and greenhouse gases. For each less mile between the supplier and the site, non-renewable fuel resources are saved and greenhouse gas emissions that cause health problems and global warming are reduced [2].

Some ingredients are easier to obtain locally than others. For example, steel is produced in a few centralized factories, while bricks and lumber are often produced locally. Recovered or reused materials are often local and serve twice with almost the same energy cost. Some methods use so much energy that they offer no real savings to the environment. The work is usually done with hand or small power tools and uses less non-renewable energy and more renewable human energy, resulting in more jobs than conventional demolitions [17].

Recycled materials are remade between first and second use. Careful analysis is required to know which materials are environmentally cost-effective to recycle. Recycling, like salvage and reuse, keeps materials out of landfills. Sometimes this is reason enough to recycle. If the use of local materials follows the principles of "close to the source", the closest source is the site itself. Most of the materials for traditional construction, raw wood or stone, are procured locally or very close by. Local material limitations play an important role in the development of regional technologies and design styles. With creativity, a wide range of locally available materials may be used effectively in landscapes [11].

Using local materials in a stable site to reduce costs and environmental pollution:
1. Less processed materials (for example, sawn or air-dried timber) are used.
2. At least a general audit of the energy required for extracting, producing, transporting and installing materials is done.
3. Exploration of reusable recycled materials is determined. For example, stone, brick or concrete pavers instead of poured concrete.
4. Avoid petroleum based materials if possible. Asphalt and plastic are necessary in some cases but not for every purpose.
5. The use of toxic materials is minimized both on site and during construction or disposal [9].

Conclusion. What will lead to the final result in the upcoming article is that the sustainable park, unlike the usual urban parks, has an ecological cycle pattern in four key axes, i.e. green energy production with storage, transmission and consumption without waste and solid waste in the electricity system; collection, treatment, storage and distribution and redelivery of water in the water network; Having and harvesting plants in the design of sustainable planting and finally reusing recyclable materials and materials on the site has practically tied the fate of its economy in improving the city's environment as much as possible.

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