

FRUGALITY AS KEY VALUES IN LANDSCAPE ARCHITECTURE IN THE FACE OF CLIMATE CRISIS

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ABSTRACT : The structure of things is governed by criteria that also determine their formation, according to Leon Battista Alberti. These form the fundamental connection between the natural and artificial worlds. The observer learns the fundamentals of forms and applies them to the project; occasionally, the forms correspond to archetypes. Archetypes as Frugal Architecture. The importance of highlighting the function of landscape architecture has never been greater. The holistic approach used by landscape architects is the kind required to build frugal environmentally friendly sustainable locations for living and working delivering resilience in the face of a changing climate.

1.INTRODUCTION

Architecture suffers from a bulimic fantasy of omnipotence, much like every other manifestation of collectivity. It would require modest architecture. It might also require a "Grand Declaration" for architecture, outlining a sustainable approach for this field. Frugal architecture is what it is termed. The Landscape Institute demands that the contribution of landscape architects to the battle against climate change be acknowledged. In order to achieve this, there has to be a far deeper understanding of the comprehensive perspective that landscape architecture represents and its basic significance in guaranteeing our sustainable future. Our ideal future is one where the effects of climate change have been reduced and where people have learned to adapt to them.

1.1 FRUGALITY

1.1.1 THE CONCEPT OF FRUGALITY IN ARCHITECTURE

The principles of frugal architecture are straightforward. The foundational elements of bioclimatic design include natural ventilation, passive cooling, heat input recovery, and thermal inertia. These somewhat antiquated concepts and systems were used in the past and have been revived now through technology. Technology has undoubtedly improved things, but not significantly. The ideas, the foundational ideas, are handed down to us from the past. Without this base, we are powerless to do anything.

Being inexpensive and of low quality is not the goal of frugal living. According to the same line of thinking, being frugal means avoiding wasting money on things that don't really matter and instead minimising your use of resources.

Frugality means creating a more compact, sustainable home with more room for growing food and less processed goods. another, as well as dismissing changes in things and movement, for the purpose of this logical consistency.

1.2 LANDSCAPE ARCHITECTURE

1.2.1 LANDSCAPE ARCHITECTURE AND CLIMATE CHANGE

Leading organisations studying climate change keep an eye on and analyse global climatic patterns. There is now overwhelming evidence that the climate is already shifting. Due to the cumulative effects of the emissions that have occurred since the beginning of industrialization, these changes are expected to persist regardless of future greenhouse gas emissions. All those involved in the management of the built and natural environment have an urgent challenge in adapting landscapes and locations to these changes. Multifunctional landscapes can help with flood reduction, food production, energy production, water storage, biodiversity preservation, and the promotion of health and well-being. Since masterplanning, landscape design, and management are generally approached holistically by landscape architects, the field has an obligation to practise environmental stewardship. In addition, the profession has a broader responsibility to plan, develop, and construct sustainable communities, bringing a balanced perspective on the environment, society, and the economy to the fight against climate change.

1.2.2 RESPONDING TO CLIMATE CHANGE

If we want to mitigate future change and adapt our ecosystems to a changing climate, sustainable landscape planning, design, and management are crucial. Landscape solutions frequently include a variety of mitigation and adaptation concepts, many of which are interrelated and reinforce one another while also bringing about broader socio-economic and environmental advantages. For instance, providing urban green space will attenuate by storing carbon and lowering surface run-off, a crucial component of adaptation.

In order to safeguard, conserve, and improve urban and rural landscapes, landscape architects offer a comprehensive strategy that takes into account the economic, social, and environmental factors. This strategy will help with climate change adaptation and mitigation, ensuring the long-term viability of our landscapes and the communities that inhabit them.

1.2.3 MITIGATION

Landscape architects have access to a wide range of mitigation techniques for climate change. Mitigation, which is anything that slows down global warming by lowering the concentration of greenhouse gases in the atmosphere, can take many different forms at all different levels of society, from individual actions like eating less meat to governmental policies that fund public transportation systems. Take for example campaigns that seek to plant a specific number of trees within a given timeframe or a company's promise to offset some emissions by planting a sapling for each product sold. These plans are excellent strategies to restore areas of land that have been damaged by human activity when carried out using techniques that respect ecological knowledge. However, there are circumstances where planting trees can actually reduce the amount of greenhouse gases in the environment. Some "reforestation" initiatives are really "tree farming" operations that cover a huge area with a single species of seedling. The trees are frequently planted in monotonous rows that are too thin to support the healthy understory of shrubs, groundcovers, and annuals that fosters a genuine forest's biodiversity and sequesters much more carbon in its more abundant vegetation and richer soil. Sometimes the seeds or saplings that are planted never sprout or die after a few months, even though they are counted as one distinct tree for a company's public relations team to brag about on social media. Conversely, trees that do succeed in maturing are not necessarily planted in the best locations.

1.2.4 ADAPTATION

Even if efforts to slow down global warming by cutting greenhouse gas emissions are successful, the effects of what has already transpired will be felt for decades to come.

The holistic approach to place-making of the landscape architect is critical to the creation of environments that are robust and flexible to climate change. These skills need to be employed at the earliest possible opportunity in the design and delivery of projects.

The network of areas and natural components that make up and connect our landscapes is known as "green infrastructure." The idea can be used at various scales, including local, neighbourhood, town, city, and city-region/region. It exemplifies a wholistic approach to the built and natural environments that acknowledges the crucial, multifaceted role they must play in promoting the economy, biodiversity, larger communities, and individuals as well as being crucial to climate change adaptation.

2.1 FRUGAL BUILDINGS

There are eight ways that structures can be considered frugal: The first three are their thrifty use of the energy required to create and maintain structures, as well as the energy of transportation required for building occupancy. The use of sparingly used materials during construction, recycling used materials during operation, and good management of the water and air around the buildings come next. Last but not least, being frugal includes preserving both the environment and our personal health.

2.2 LANDSCAPING NEED

2.2.1 ECONOMIC BENEFITS

landscaping enhances property values.

Proper placement of shade trees and evergreen reduces cooling costs

2.2.2 ENVIRONMENTAL BENEFITS

One tree removes 26 pounds of carbon dioxide from the air every year and releases about 13 pounds of oxygen-enough for a family offer on a daily basis.

Plants control runoff and erosion.

Plants reduce noise pollution up to 50 percent.

Plants creates green space for human rest & recreation.

3.1 FRUGAL IDEAS FOR LANDSCAPING

The term "landscaping" refers to a variety of components that might work together to provide a welcoming yard. Landscape design can be broken down into two main categories: softscaping and hardscaping. While hardscaping refers to structures like patios, patio furniture, rock xeriscaping, and the like, softscaping refers to live elements like flowers, shrubs, trees, and more.

The greatest landscaping plans balance soft- and hard-scaping elements. The smartest homeowners use low-cost landscaping solutions to strike a balance between expense and effect. Going the DIY route when possible is one of the best methods to save money on landscaping.

3.1.1 MULCH BED

Mulch would be one of the more affordable landscaping materials. Mulch is made up of a variety of organic components, including grass clippings, leaves, bark chips, and other organic matter. Typically, mulch is utilised to maintain soil moisture. However, for a variety of landscaping tasks. Mulch is available in a range of hues and textures. It may be a deep brown colour like rich soil or a reddish-brown hue resembling clay. Additionally, it might be loose and soft like mud or stiff like wood chips. Depending on the type of mulch, prices for mulch range from a few.



FIG.1 – MULCH BEDS

3.1.2 PEA GRAVEL

Usually found next to lakes or ponds, pea gravel is a tiny, brownish or grey stone. For sidewalks, patios, and other areas with heavy foot activity, it is often utilised as gravel. Considering that pea gravel is a smooth stone, it is highly helpful in landscaping work. One of the least expensive stones you can use in landscaping is pea gravel.



FIG.2 – PEA GRAVEL

3.1.3 BARK

A decorative sort of landscaping material from pine, spruce, fir, or redwood trees, bark is often referred to as landscape bark. Typically, it is made by scraping the bark off of downed or chopped trees, and it is then sold as mulch to gardening supply stores. When provided with the proper conditions, such as soil and water, bark can last up to ten years. Bark is a fantastic material for landscaping projects because of the variety of colours and textures. It may also be reasonably priced & costing.



FIG.3 – TREE BARK

3.1.4 ROCKS

These places can be in construction areas or farms. You can get rocks for free as long as you ask for permission. Another place can be in your local forests. You can remove rocks as long as the forest is not a national park. If you cannot acquire free rocks, they are also available at a relatively low price at home improvement stores or gardening stores. The price could be depending on how large the landscaping project is. The various colors and textures of rocks can make them perfect for landscaping projects.



FIG.4 – ROCKS

3.1.5 SAND

Sand is a material that is not just present on beaches all over the planet. Although it is frequently used for playgrounds, it can also be employed in imaginative landscaping projects. Sand can range in price depending on the type and colour. Sand can be used to fill the spaces between brick pavers in a practical method. Sand can also be used in some more inventive ways, though. The atmosphere and tranquilly of the landscape can be greatly enhanced by incorporating a Zen garden made of sand. This can be a wonderful location for outdoor meditation as well as relaxation.



FIG.5 – SAND

4.CASE STUDY

4.1 CONCEPT OF VERTICAL COURTYARDS

Client

Trafford Council Greenspace & Sustainability Team
Seymour Park Primary School
Safer Stronger Communities Fund for Old Trafford

Lead landscape architect

Groundwork Manchester

CDM coordinator

Groundwork Manchester

Contractors

County Landscape Development

Further information

Groundwork Manchester www.manchester.groundworknw.org.uk

4.2Description

Groundwork was in charge of converting a vacant lot in Old Trafford, Manchester, into a 900-square-meter accessible leisure area for the neighbourhood and nearby school that used locally produced, environmentally friendly materials. The project's sketch and comprehensive designs, as well as the procurement of sustainable materials, the creation of the tender package, and the management of the contract, were all generated by groundwork.

Initial consultations with the many clients and stakeholders, including the neighbourhood school, locals, and the property owner Trafford Council Greenspace & Sustainability Team, resulted in a comprehensive brief. To ensure the long-term success of the garden, the project involved involving the local community as much as possible. It also included incorporating environmentally sustainable and local materials in as many aspects of the garden design as possible. Finally, it called for using local labour and expertise whenever possible.

A pattern made by landscape architects served to highlight the significance of contemporary design in public places. However, sustainability and reducing climate change are the main focuses of the plan. The decking for the promenade was salvaged from a nearby Salford bridge. Only a half-mile away, in a cobbled passageway, were the stepping stones found. The mulch is a coarse compost made by a social enterprise in East Manchester that processes all the fruit and vegetable waste from the area's New Smithfield Market. A local artist created the gate and railings. The Peak District provided wall copings and boulders quarried there as well as reclaimed dry stone walls. resources with recycled content were required when salvaged or local resources could not be found.



FIG.6 – LANDSCAPE GARDEN



FIG.7 – LANDSCAPE GARDEN

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