

The role of Landscape Architects in Circular Economy and Climate Change

IFLA EUROPE POSITION PAPER 2021

COLOPHON

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This Paper on Circular Economy is part of a series of position papers planned by the Professional Practice Committee of IFLA Europe and Vice President for Professional Practice Dr Katerina Gkoltsiou.

In preparing this paper we followed a structure that we wish to establish as a template and so provide some thoughts and guidance on issues that evolve with changing conditions on our regions and overall, on our planet. The document is being developed in several parts (or stages). It is to be considered a 'living document' and will require monitoring and updating as required to ensure the maintenance of technical knowledge in the chosen topics.



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FOREWORD

by Katerina Gkoltsiou

IFLA EUROPE Vice President for Professional Practice

Over the past decades, the European Union has put in place a broad range of environmental legislation to give more long-term direction towards a healthy environment stemming from an innovative, circular economy where nothing is wasted and where natural resources sustainably. managed Among European Commission's goals is A new Circular Economy Action Plan - For a cleaner and more competitive Europe which states that "scaling up the circular economy from front-runners to the mainstream players will make economic a decisive contribution to achieving climate neutrality by 2050 and decoupling economic growth from resource use, while ensuring the long-term competitiveness of the EU and leaving no one behind" (European Commission Communication COM(2020)98)

Consequently, the European Region of International Federation of Landscape Architects (IFLA EUROPE), - embraces the above goals in the new circular economy model and aims to present the contribution of Landscape Architects to Climate Change adaptation mitigation in relation to circular economy. The particular position paper is the first from one series to follow, to present the value of landscape architecture profession, and to promote Landscape Architects' position in relation to Climate Change and Circular Economy.

This position paper has four (4) aims:

- 1. to clarify and analyse the crucial role of Landscape Architects in implementing holistic circularity concepts and the technical, analytical and scientific skill sets to serve and implement the Circular Economy model in landscape projects.
- 2. to present the importance of adopting the principles of Circular Economy in design and management of our landscapes.
- to reveal our ideas about how we as Landscape Architects could influence policy mechanisms for implementing Circular Economy at European and global level and
- 4. to promote our positions in relation to the role of Landscape Architects in circular economy model.

In the 21st century, Landscape Architects are one of the most competent and eligible:

- · to improve health and well-being,
- to understand and consider natural processes and as result to support Green Deal initiatives,
- to apply the principles of social, economic and environmental sustainability to landscape projects, seeking to avoid climate change and to manage microclimates,
- to enhance the value of the environment and implement resource management policies appropriately, utilising natural resources,
- to account for social context of landscapes including visual, environmental, access/use and heritage.

It is the right time to show our value and make the difference.



1. What is Circular Economy?

Many definitions exist for Circular Economy and as Landscape Architects, perhaps it is those definitions which inform us of our tasks as designers which are most relevant. The following provide some definitions as they relate to European and Global policy makers. We interpret our own meanings from these definitions and include the principles in our design, construction—and operational/maintenance plans for our designed, managed and associated natural or anthropogenic landscapes.

The European Parliament defines Circular Economy¹ in terms aligned to the Green Deal and the efforts to reduce our consumption of valuable resources and achieve a more responsible economic model.

In order to fulfil the ambitions of the Climate Change plans and Green Economy, Europe needs to accelerate the transition towards a regenerative growth model that gives back to the planet more than it takes, advance towards keeping its resource consumption within planetary boundaries, and therefore strive to reduce its consumption footprint and double its circular material use rate in the coming decade.

The UN emphasizes the value of reusing products by giving the following definition of the Circular Economy "A circular economy entails markets that give incentives to reusing products, rather than scrapping them and then extracting new resources. In such an economy, all forms of waste, such as clothes, scrap metal and obsolete electronics, are returned to the economy or used more efficiently. This can provide a way to not only protect the environment, but se natural resources more wisely, develop new sectors, create jobs and develop new capabilities". (UNCTAD², 2021)

"The goods of today are the resources of tomorrow at yesterday's resource prices"

¹ https://ec.europa.eu/environment/strategy/circular-economy-action-plan en

² https://unctad.org/topic/trade-and-environment/circular-economy



2. Landscape Architecture and its relation to Circular Economy

Landscape Architects plan, design and manage natural, rural and built environments, applying scientific and aesthetic principles to address the sustainability, quality and health of landscapes, collective memory, heritage and culture, and territorial justice. It is important to realise that as Landscape Architects we don't just individually deal with built environments, and their aesthetic but have an inclusive vision to produce and build on behalf of the inhabitants. We achieve this through the design processes and the management of the various ecologies according to scientific and social principles.

It is our mission as designers to assist in setting the Vision for a city or a region.





So, as Landscape Architects we are able to assimilate the various components of our design and the receiving landscape/area/place and provide the 'tools' for realising the visions and needs of the population living with our designs. **Using materials in a creative and responsible way** is key to achieving these aspirations.

Though there are many materials 'at hand' and we may usefully summarise them for this initial Paper in the following categories::

Component	Forms	Expression in the landscape
Water	Freshwater/Seawater	Watercourses and reservoirs
Biological life	Plant, Animal, Fungi, Soil and variations	The visible 'Natural World'
Hard materials	Natural (Stone, Timbers) and manufactured (Pipes, Aggregates, Resins, etc.)	The built environment whether rural or urban
Other	Materials in all natural and manufactured forms including plastics, ceramics etc.	

These materials in a variety of forms are integrated in our anthropogenic landscape and appear throughout all forms of natural and built landscapes and seascape.

Our task includes the careful arrangement and use of these materials to serve both the needs of humanity but also of the other natural world.



The definition of Circular Economy is particularly relevant to our profession. An explanatory framework is given by our Member - the Association of Danish Landscape Architects. To foster a pan-European approach, we provide this Position Paper as an example and promote each IFLA Europe members National Associations and or region to develop their own response:

Circular Economy is the term used to describe an economic system in balance with nature, an economy which doesn't extract or pollute more than systemically sustainable. Generally, Circular Economy operates with four principles for creating value by extending the lifetime of products or materials. These principles are here translated for use within the context of landscape architecture and construction (Andersen, et. al., 2019).



The Inner Circle

The less change you need to apply to a site, to parts of a site - or the less you need to refurbish a structure or a material to reuse it - the higher the potential savings on energy, water and labour are. The keys to The Inner Circle are retaining existing project parts, for instance: plantings, soil, sub- or base layers, or entire paved areas, as they already are on site.



Long-Term Circulation

The longer a structure or a material can last, the fewer natural resources are needed in long-term perspective. Long- Term Circulation is ensured by designing and constructing structures in a way that allows for easy maintenance, partial replacement and eventual disassembly and recirculation. Long Term Circulation is any effort intending to prolong the lifetime of structures, and/or to minimize the resources needed for maintenance.



Cascaded use

Through light reprocessing or refurbishment, used materials or construction parts can extend their lifetime and be reused as parts in new projects. This keeps the materials in circulation, even in reshaped or refurbished forms, thereby minimising the need for extraction of new, virgin material resources and lowering the environmental footprint in general.



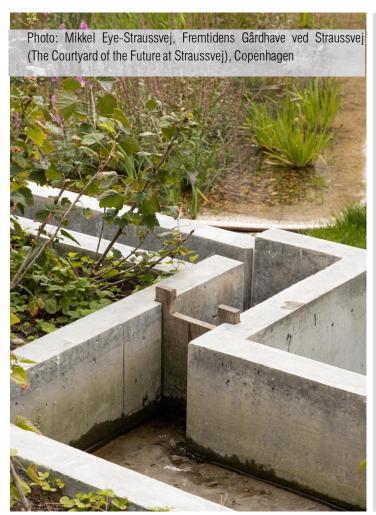
Pure Circles

If a construction material retains its purity and quality, it's easier to reuse the material than if it's been processed or mixed – for instance if it's been coated or joined through casting or gluing. Pure materials often have a higher resale value, even often increasing value over time.

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Having as such a knowledge that 'bridges' technical, analytical and biological skill-sets, Landscape Architects are able to coordinate, plan, design and manage the interactions between the natural and cultural environments. This combination of the skills and the ability to manage landscape 'sites' of all scales, presents Landscape Architects with the opportunity to play a crucial role in implementing holistic circularity concepts. Achieving this combination of design and site and respecting the 'Genius Loci' will be important requisites to achieving adaptation and mitigation related to current crises in climate change whilst providing a continuity and stability of ecosystems.



In establishing a means by which we may live in a manner respectful of our use of materials and resources, the creation of quality spaces and landscapes, can and does lead to improvements in socio-economic and community health and welfare.

Our role as Landscape Architects makes us very competent in achieving this balance to fully assist the overall societal needs in tandem with a deep understanding of the physical and biological possibilities of our lands and landscapes. This is to the benefit of all society that we ultimately serve and a responsible way to manage the resources of our planet and respect all the vast array of life in its seas, lands and skies.



3. What does Circular Economy mean to us as Landscape Architects?

Circular Economy strives to minimise negative environmental impacts due to material supply and use through qualitative transformation in how we design our landscapes and the construction scenarios coupled with the closure and deceleration of material cycles.

Our designs and the landscapes we make, manage, and of which we are ultimately stewards, must be linked to the wider natural systems and a realisation that all things are interconnected. To realise sustainable policies and to ensure liveable cities, we need to include the principles of the Circular Economy in the how we 'cycle' these elements through society and focus on key issues such as:

- the reuse of buildings and products,
- the retention of materials within our systems and
- the use of products in a manner which ensures that the outcomes are healthy for both humans and the environment.

Therefore, we must consider the 'service life' of the materials used in our projects and particularly those in 'constructed landscapes'. Our designs must be considerate of the principles of the Circular Economy and should be constructed and maintained (or not) in a way to ensure that our use of resources is optimised. This is to ensure that the supply of what now seems like common materials is 'circularised' and materials are 'cycled' through various projects, in a variety of forms.

³ Note 'inverted commas' as this an interesting concept and one which project managers and decision makers will understand. Perhaps also to say the expected life is 'measured in geological periods and not annual reports, however, in convincing our clients (public or private) we must clearly state the management and maintenance and that 'whole life' costs may be less.

1:



4. Applying the Principles of the Circular Economy

When applying the principles of the Circular Economy to our economic and value systems, the focus must shift from a purely economic value to biological, cultural, and social values and related issues. This is, of course, the subject of much research in how we can provide value in many ways through the projects we design and construct⁴. Moreover, the conceptual diversity must be promoted, and so an open dialogue with all concerned (clients. communities and receiving population) is to be welcomed and carried out in a participative manner with the Aarhus Convention as a guiding principle⁵.

The launch of the New European Bauhaus Initiative offers an opportunity for а participative approach to the many issues surrounding materials and their use by reference to the original concepts underlying the movement. The multidisciplinary approach, careful and creative use of materials and the value given to artisanship, must be part of the guiding principles of this New European Bauhaus and its timely realisation.

https://www.ciria.org/Research/Project_proposals2/Delivering_green_infrastructure_along_linear_assets.aspx Research on the use of materials in Road Construction in Ireland

https://www.tii.ie/tii-library/conferences and seminars/tii-webinars/tii-webinar-5/TII-Seminar-CE-Jan-2021-v6-(002)-(004).pdf

⁴ Research on the use of Blue Green Infrastructure on Linear Infrastructural Assets including Roads and Transport Corridors, Powerlines, Waterways.

⁵ 'All at the table with equal eye level'. https://ec.europa.eu/environment/aarhus/



It is through such an active engagement between professions, economics, environment and participation of civil society that we can and will produce effective solutions. Cities, landscapes and infrastructures can serve as a raw material stock, could use more renewable energies and can effectively promote biodiversity. Such landscapes, areas and places sometimes are and surely must now be made for people, to foster the valuing of natural systems and ultimately inspired by nature. With each new intervention, we can ensure that the problem becomes more and more part of the solution. We must also ensure that the communities are at the centre of such interventions and that local knowledge and efforts are also 'circularised'.

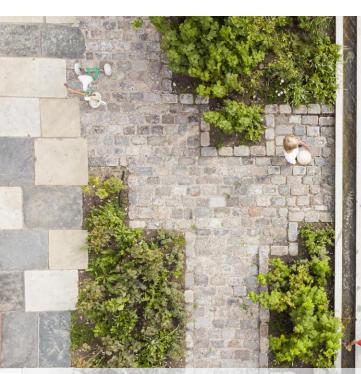




Photo: Mikkel Eye-Straussvej, Fremtidens Gårdhave ved Straussvej (The Courtyard of the Future at Straussvej), Copenhagen

As Landscape Architects, we can be a significant part of finding innovative solutions to the challenges of addressing material use in a creative way. As a profession which includes such a diverse mix to include designers, scientists and planners/managers, we are well suited for such innovative approaches.



5. How can we influence the policy mechanisms for implementing Circular Economy at European and global level

As Landscape Architects, we may influence policy enabling better Landscape outcomes. Depending on our positions within private or public practice, we can both assist in forming and implementing good and resilient landscape policies. The focus of economic modelling is now also beginning to focus more on the resilient design and so the 'whole life' concept underlying our projects and concepts can inform such a change in 'assignment of value' i.e. the value placed on responsible use of materials or not in some cases.

Over the past decades the European Union has put in place a broad range of environmental legislation. **The 7th Environment Action Programme (EAP)**⁶, aimed to give a more long-term direction, sets out a vision beyond that, of where it wants the Union to be by 2050:

"In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society."

Among EAP's **key objectives** are:

- to protect, conserve and enhance the Union's natural capital
- to turn the Union into a resourceefficient, green and competitive low-carbon economy
- to safeguard the Union's citizens from environment-related pressures and risks to health and well-being

⁶ https://ec.europa.eu/environment/action-programme/



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The European Green Deal⁷ Communication launched a new growth strategy for the EU that aims to transform the EU into a fair and prosperous society, by providing:

- fresh air, clean water, healthy soil and biodiversity
- renovated, energy efficient buildings
- healthy and affordable food
- more public transport
- cleaner energy and cutting-edge clean technological innovation
- longer lasting products that can be repaired, recycled and re-used
- future-proof jobs and skills training for the transition globally competitive and resilient industry.

As a result, the Council of Europe (CoE) and the European Union (EU) include the principles of the Circular Economy as a central aspect of the European Green Deal and related industrial strategies.

Their position on Circular Economy is outlined in CoE and EU Commission findings of December 2020.

Part of our current dialogue is to establish liaison with European wide institutions to ensure our profession of Landscape Architecture is assisting in leading the effort to implement Circular Economy principles in all aspects of our work and the wider civil society.

Our efforts as Landscape Architects are focusing on 'how we, as a profession, can assist the implementation of the Circular Economy in achieving the aims of the various policy aspirations in the wider Europe and beyond.

The European Commission New Circular Economy Action Plan states that "scaling up the circular economy from front-runners to the mainstream economic players will make a decisive contribution to achieving climate neutrality by 2050 and decoupling economic growth from resource use, while ensuring the long-term competitiveness of the EU and leaving no one behind" (EC 2020)

⁷ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal en

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"This Circular Economy Action Plan provides a future-oriented agenda for achieving a cleaner and more competitive Europe in co-creation with economic actors, consumers, citizens and civil society organisations. The Plan presents a set of interrelated initiatives to establish a strong and coherent product policy framework that will make sustainable products, services and business models the norm and transform consumption patterns so that no waste is produced in the first place". (EC 2020)⁸

'Leading the way to a global Circular Economy: state of play and outlook'

The **UNEP** has outlined the following in relation to the Circular Economy and our potential impact on achieving the Sustainable Development Goals (SDGs)

'Circularity and sustainable consumption and production are essential to achieving multilateral agreement, from the Sustainable Development Goals to the Paris Agreement to the post-2020 global biodiversity framework. Moreover, they are essential to a sustainable recovery from the COVID-19 pandemic.'

By adopting measures such as reusing and recycling materials in landscape projects, using wood and other natural materials through a sustainable forest management system, we are promoting 'circularity' in our thinking. Our projects can lead to better long-term landscape outcomes and ensure a responsible use of materials. This will add to the many ways in which we may address the current climate and biodiversity emergencies as it is understood that the functioning of natural systems relates directly to the success, or failure, of commercial agriculture viz. farming methods, land use, pollination strategies. We aim to influence these at regional, national, and local levels and promote and ensure the concepts are realised in our projects.

The list of policies outlined above, is by no means exhaustive but aims to highlight the most relevant and recent sources.

⁸ https://ec.europa.eu/environment/pdf/circular economy/leading_way_global_circular_economy.pdf

https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN https://ec.europa.eu/commission/presscorner/detail/en/ip 20 1599



6. IFLA EUROPE Position

1. Recognising the importance of the Landscape Architect's skills¹⁰

The profession of Landscape Architecture is inherently connected to the implementation of Blue-Green Infrastructure (BGI) and Nature-based solutions (NbS) within the built and natural environment. The inclusion of these interrelated principles is a part of our holistic thinking and offers us unique opportunities to include circular principles.

IFLA EUROPE calls on EU Institutions to recognise and promote the contribution of Landscape Architects to landscape projects as it relates to circular economy in all relevant legislation, standards and funding programmes.

2. Promoting the model of Circular Economy 11

We would promote collaborations within and between professions as with the combined response of private practice members in the 'built environment'.

As a profession, we also promote behavioural change. We cannot achieve the aspirations of policies such as Circular Economy without changing our individual and therefore collective behaviour. In developing designs that are inclusive of local materials, respect for the locality and local populations, we can enhance the human experience of the urban and rural environments and ensure their comfort and resilience for all. We must remind ourselves of our humanity.

IFLA EUROPE calls for the principles of Circular Economy to be applied at all landscape project stages from the initial vision and strategy, the development of the concept and plans leading to the detailed specification and design, construction. The vision the Circular Economy must continue to the use, function, operation and maintenance of our built and natural landscapes, where appropriate.

¹º https://iflaeurope.eu/index.php/site/news-single/report-urban-landscapes-and-climate-change-the-contribution-of-landscape-architects-to-improving-the-quality-of-life

¹¹ https://constructiondeclares.com/

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3. Enhancing the circular principles in policy decisions

Circular Economy approaches can take effect in the various stages of a product's lifecycle. As a result, the products, processes, buildings, and cities will emerge, which are safe for humans, healthy for the environment and successful for business. Nonetheless, the achievement of circular principles can only be achieved if the policy decisions are transferred in social, relational, natural, and economic 'value-chains' 12 that include all the actors: government, industry, academia and civil society, ranging from international policies to local regulations.

IFLA **EUROPE** supports the collaboration EU among Institutions, National Associations, professionals from other disciplines, experts and citizens to make tomorrow's landscapes more sustainable, highlighting the value simplicity, functionality circularity of materials without compromising the need for comfort and attractiveness in our daily lives.

4. Providing financial support to research and innovation

Supporting research and innovation in the overlap of landscape architecture and Circular Economy should be among the priorities, for healthy and sustainable landscapes. The landscape architecture profession in Europe has much research potentials but needs support to develop its tools and services.

IFLA EUROPE calls for EU research funding programmes to provide sufficient finance to fund research and implementation of good quality landscape works thus improving the health and quality of life for residents and combating climate change; and to better Landscape Architecture SME's and businesses, enhancing collaboration with other disciplines.

^{12 &#}x27;value' is not just monetary but measured as social and natural 'capital'

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The greater common good cannot exist without the small things being attended to.

It is part of our nature as designers to 'be perfectionists'.

It is this need for attention to the details in our work and projects that can ensure that these global and regional concepts and policies are reflected in local and individual activities.





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https://constructiondeclares.com/



ANNEX

The examples of Landscape Architects in Circular Economy by IFLA Europe member Danske Landskabarkitekter - Association of Danish Landscape Architects