D6.3 Digital Placemaking tool-kit for all Cultivating Cities

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Contents

1. Executive summary.

In an era where technology and nature seemingly stand at opposite ends, digital placemaking offers a unique opportunity to bridge this gap, offering a harmonious blend that enhances human connection with urban nature environments through innovative digital interventions.

Firstly, descriptions and explanations of the nature of digital placemaking is provided, highlighting how digital innovations envision a future where technology enhances, rather than detracts from, our connection with the natural world. By embracing this innovative approach, we strive to create a blueprint for sustainable, digital placemaking that can be replicated and adapted globally.

Secondly, a framework for the planning implementation and evaluation of a digital placemaking initiative is provided, offering support for cities and municipalities embarking upon such an endeavour.

Thirdly, bespoke digital placemaking toolkits have been created as a series of strategies and decision-making tools for each City involved in the GoGreenRoutes project. Each toolkit provides a set of strategies based on empirical and industry insights, designed to enhance the urban nature physical place experiences and promote nature connectedness, place attachment, place branding and wellbeing. Lastly, broader advice has been suggested for the associated Seed Cities involved in the project.

The toolkits have been structured to be useable, comprehensive and easy to follow. All toolkits are informed by our systematic review of empirical research findings, supported by our theoretical model of Digital Placemaking for Nature and Wellbeing. The importance of nature interactions for populations' mental health and wellbeing, especially in marginalised and deprived communities, has been highlighted in research relating to Post-CV19 urban life.

The impact of technology in our life has shaped how people interact with their surroundings, where almost all citizens in Europe own smartphones. As such, digital placemaking has the potential to shape cities promoting wellbeing, economy and sustainability while developing place marketing and branding. The primary goal of this deliverable is to leverage digital placemaking as a tool that experiences to enrich the way people interact with and appreciate natural spaces. By seamlessly integrating digital technology into urban nature environments, we aim to create a balanced and sustainable approach to placemaking, fostering a deeper understanding and appreciation for nature while also supporting citizens health and wellbeing.

2. Glossary

Augmented Reality (AR): is a technology that overlays a computer-generated image or information on a user's view of the real world (Clarke, 2021).

Digital Natives: are individuals born the late twentieth and early twenty-first century, who have spent their life immersed in the digital culture and have developed digital resilience (Tran et al., 2020).

Digital Placemaking: describes the use of digital media to create a sense of place for oneself and/or others – to embrace digital media affordances in order to cultivate or maintain a sense of attachment to place (Halegoua & Polson, 2021).

Gentrification: is the process by which under-resourced neighbourhoods are developed and experience a migration of affluent newcomers. It is a sociocultural phenomenon in which market forces contribute to the renovation of neighborhoods that have seen decades of disinvestment (Jelks et al., 2021).

Hybrid experience: we refer to hybrid experiences to those that are a combination of the online and offline world. This means the physical experience is mediated through a digital layer such as an AR app or using Google Maps to navigate a space.

Nature Connectedness: This is a psychological construct that measures individuals' subjective sense of connection to nature.

Place attachment tripartite: is a three-dimensional framework of place attached created by Scannel and Gifford (2010) that proposes place attachment as a multidimensional concept with person, psychological process and place dimensions.

Place attachment: is the emotional bonding between an individual and a specific location (Debenedetti et al., 2014).

Place branding: is a communication tool based on the perception of a place identity and image in the target audience. It focuses on the development of strategies for how places can build an advantageous place-brand architecture (Zenker & Braun, 2010).

Place maker: is the professional focused on placemaking processes.

Place management: is a strategy that strives to make places better (Keegan, 2021).

Place manager: is the professional in charge of the management of a place.

Place marketer: is the expert on place marketing.

Place marketing: is one of the traditional product marketing mix that refers to a location as both the product and the place (Kavaratzis et al., 2017).

Placemaking: is a participatory process for shaping the public space for the people that use it (*What is Placemaking?,* 2007)

Urban nature: refers to the natural environments found in a city. For example, an urban park.

Virtual Reality (VR): is a computer-generated simulation of a three-dimensional image or environment that allows a certain degree of interaction, creating the illusion of reality (Litleskare et al., 2020).

Wellbeing: It is usually distinguished between hedonic wellbeing (Kahneman et al., 1999) and eudaimonic wellbeing (Ryff & Singer, 2008). The first one understands wellbeing in pleasure attainment and pain avoidance terms, also known as subjective wellbeing (Kahneman et al., 1999). The eudaimonic approach sees wellbeing as the full functioning of the person, relating to self-realization (Ryan & Deci, 2001).

3. Digital Placemaking

3.1. What is Digital Placemaking?

'Placemaking needs to work for social and environmental justice – this is what really matters and should be what shapes the next era of placemaking: to create places that heal, rather than harm.' Courage (2021, p.6.)

Digital placemaking has been approached from different disciplines and perspectives, concluding on a definitional dilemma. However, we understand digital placemaking as a process to create sense of attachment to a physical space using digital media (Halegoua & Polson, 2021). It is an evolution of placemaking practices, where the community is key in the development of social bonds, sense of place and inclusion. Furthermore, it can facilitate social change and urban renewal through community participation (Foth, 2017a).

Any digital placemaking experience should foster and ensure these four elements are present and addressed. Our approach to digital placemaking understands there are four essential elements involved in this process:

Community engagement – a bottom-up process where the community is the key agent, proactive and involved in every stage.

Sense of place – is the objective that we aim to promote. Meaningful place attachment is created between the community and the place.

Inclusion – the diverse community must be represented and involved, making the experience accessible and inclusive to all.

Hybrid reality – technology is used to enhance the place experience, improving the interactions among the elements mentioned. Online (digital media technology) and offline (physical space) are combined in the hybrid reality.

3.1.1. Community engagement

Digital placemaking should be a participatory and bottom-up process. This means, the 'experts' are facilitators of these practices, and the community is considered an expert. Therefore, the decisions are made for and from the bottom of the social pyramid, by the community engaged. Digital placemaking experiences are for the community and driven by the community.

Community engagement is a process that involves people collaborating in the decisions and outcomes that benefit them (Clarke, 2021; Foth, 2017b; Fredericks et al., 2018; Freeman et al., 2019). The community engagement process empowers communities (Fisher et al., 2018) and improves social cohesion within the group (Najafi et al., 2021).

The community needs to be the driver of the digital placemaking experience, with the community being an active member in every stage of the process while digital placemakers are facilitators that ensure this is achieved. We understand there are different levels of participation due to a variety of reasons, from consultation to co-creation or co-production.

Furthermore, we approach digital placemaking in this toolkit as a place branding element (see section 3.4.). Place branding is the application of branding principles to place (Reitsamer & Brunner-Sperdin, 2021) in order to create positive place experiences (Kavaratzis et al., 2017). The branding of a place is a compilation of associations in the consumers' minds (Hakala, 2021). There are different types of place branding, but we will focus on participatory place branding, aligned with the community engagement element of digital placemaking. To ensure the digital placemaking experience we are planning is true to the community engagement element, the community needs to be addressed, involving the community and making them a proactive part in every stage. To warrant the brand and identity of the place are addressed, we propose this approach where the community become the brand ambassador of the place. Different strategies for engaging the community will be described in section 3.4.

3.1.2. Sense of place

Sense of place is one of the foundations of placemaking, alluding to the place attachment created between an individual and a place. Place attachment is the relationship created with a place that allows one to explore the environment and develop feelings of belonging and relief (Lewicka, 2011; Nisa et al., 2020; Scannell & Gifford, 2010).

Sense of place or place attachment is expanded in our toolkit and model (section 3.4.) to include hybrid realities as part of the dimensions or elements that aid people to feel attached to a place. We approach place attachment including the hybrid place dimension as the digital aspect of placemaking experiences also enhances the process of place attachment. Online attachment creates online and offline personal connections to a place through technology, linking users with the physical space through digital interactions. (Schwartz, 2015). It also affects the actions of the community and has an effect on the local identity. This means that the interactions created online with a physical space do help building the identity of the space in the individual. Online place attachment, can impact the actions of the community, allowing the community to organise themselves in the place but also affecting their identity of this place.

3.1.3. Inclusion

Inclusion is a crucial element in digital placemaking due to the digital and technological potential for barrier-free opportunities for communities. It has been studied in digital placemaking practices to bring inclusivity to individuals with movement restrictions (Clarke, 2021; Karge, 2018; Szaszák & Kecskés, 2020),

for information accessibility (Her, 2021; Sugangga et al., 2021), and including diverse narratives of those in marginalised communities (Foth, 2017a; Gonsalves et al., 2021; Stokes et al., 2021).

Any digital placemaking experience needs to address inclusion, diversity and accessibility specifically. As part of GoGreenRoutes we have a Gender, Inclusion and Identity (GID) panel that is currently developing assets to address this such as **the GID checklist.**

3.1.4. Hybrid reality

Hybrid reality is the main distinction between digital placemaking to other placemaking applications or types. Digital placemaking experiences create hybrid realities where the consumer and the community interact with a space and with others creating meaningful experiences, belongingness, and identities.

Furthermore, we use technology in our daily life to interact with our surroundings, from checking the weather or timetables for public transport, looking at reviews of businesses, to contacting family or friends. The rise of technology applications in our daily interactions has shaped how we understand the physical world (Clowater, 2021; Frith & Richter, 2021). Therefore, we propose the use of digital placemaking as a way to enhance the physical place experience with the community's benefit and the environment in mind.

Hybrid reality means there is a digital layer over the physical reality. This could be through location-based technology and games (Frith & Richter, 2021; Gobbo & Benedetti, 2021), augmented reality (Boffi, 2021; Clowater, 2021; Her, 2021; Hunter et al., 2022), immersive experiences (Globa et al., 2019), virtual reality (Kuchelmeister et al., 2020; Rzeszewski & Naji, 2022; Van Houwelingen-Snippe et al., 2022), or pop-up artefacts (Fredericks et al., 2018). The hybrid reality combines the physical and the digital world. Further examples of technologies used and digital placemaking experiences can be found in **sections 3.2** and **3.3** respectively.

The hybrid reality does not aim to replace the physical reality (Her, 2021), but to enhance the experience, the emotional connection and renew the excitement for it (Clowater, 2021; Kostopoulou & Fatah gen Schieck, 2021). We understand this hybrid reality as a space to further engage and connect with the physical place and with the community.

3.1.5. Limits and challenges

Numerous benefits for the community, the society and the place have been discussed from digital placemaking experiences, such as economic growth and cultural health (Morrison, 2021). However, it is essential to also address different challenges and potential risks in order to minimise their effect.

Privacy and data collection are the main challenges of any experience that involves technology. Concerns about personal data exposure and threats of

fraud and misinformation (Li & Alencar, 2022) need to be addressed when developing a digital placemaking experience to ensure the safety of consumers.

Placemaking activities usually activate the place by promoting community engagement activities in a location. As a consequence, gentrification is generated due to this place activation (Foth, 2017a). This is usually linked to placemaking activities whose only goal is the economic gain and activation of a place. Gentrification is also a risk of greening strategies that lack quality nature (Anguelovski et al., 2022).

As a consequence, the lack of community purpose is considered another risk of these practices. Despite being defined as a practice with a 'community imperative' (Courage, 2021), there is a risk to focus on economic gain only, denying the opportunities for the community and the culture of the space to evolve and flourish. This is usually encountered in top-down practices, with a minor level of inclusive practices of placemaking applied to the local community. These lack of community purpose in placemaking usually discriminate the local audience by expert insight (Sanaeipoor & Emami, 2020), where only the expert opinions are taken into consideration, overlooking the community voice and desires.

Engagement in digital placemaking experiences could also expose pre-existing inequalities and community disparities (Halegoua & Polson, 2021), where low-income groups and minorities are usually excluded from these practices (Hespanhol, 2022). Digital placemaking practices usually focus on specific populations – for example, digital native audiences – or specific economic activities (Chen et al., 2022).

Finally, it is essential to develop and enhance the unique characteristics of the space where the hybrid experience takes place, specifically to avoid standardized experiences that disconnect communities from the actual environment and context (Chen et al., 2022). Some successful projects are replicated in different locations without adapting their characteristics to the specific community or place context, while expecting to achieve the same outcomes. However, if a project has not been adapted to each location peculiarities and characteristics, the outcome will be far from successful.

3.2. Technologies

Digital placemaking experiences implement a wide range of technology (Chen et al., 2022) used to mediate and promote community place attachment. Furthermore, there are different names used to describe placemaking practices that use digital media to promote place attachment in a community (Fernandez de Osso Fuentes et al., 2023). Terms like virtual placemaking, smart place making or mobile placemaking are some examples of technology and digital media that can be included in digital placemaking practices. These practices are

constantly evolving and should be appropriate for the community purpose and digital placemaking experience goal (see section 3.4.1.).

From our research, we have found different types of technology or digital media that have been used in digital placemaking. Projects can combine different technologies in the same experience.

WhatsApp/Direct messages – e.g., a building's WhatsApp group of neighbours.

Social media campaign – e.g., Facebook groups of a specific neighbourhood where locals interact and share ideas.

Projections on physical space – e.g., Projections on a building.

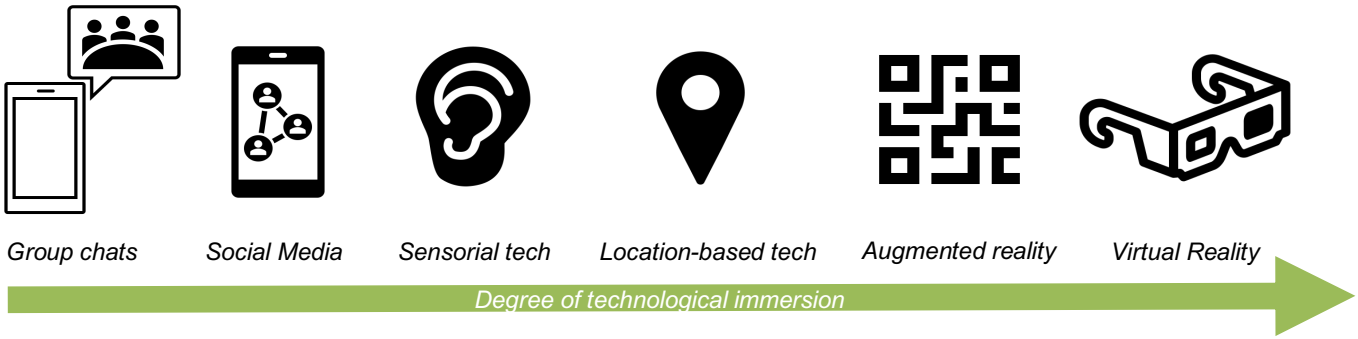
Sensorial technology – e.g., Sounds and visuals created in a specific location and activated by people interacting with them.

Location-based technology – e.g., an App to navigate the history of a space.

Augmented/Immersive reality – e.g., Pokémon Go game app.

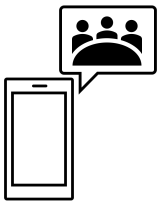
Virtual reality – e.g., Virtual showcase of a nature space.

Figure 1 – Degree of Technological Experience and Degree of Immersion



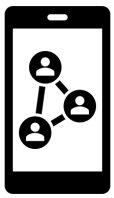
3.3. Examples

There are different examples of digital placemaking experiences, where different objectives and community needs are addressed. We distinguish them by the type of technological experience. You can see further detail on the type of technological experience and it's degree of immersion in Figure 1. Again, projects may combine different digital mediums to create their desired hybrid place experience for the community.



Direct messaging platforms

During our data collection for the toolkits where we interviewed different experts and practitioners, the use of direct messaging platforms such as WhatsApp was mentioned as a basic digital placemaking experience where inhabitants of the same building or neighbourhood would share opinions, ideas and views of the physical place but also to organise and to manage the place (Keegan & Schifanella, 2022).



Social media campaign

Ilovenoord and amsterdamnoord Facebook groups – community use of Facebook groups to dialogue and share emotions about the transformation of their neighbourhood in Amsterdam which suffered from gentrification. The resident initiative positioned locals in two opposite groups of like-minded residents that developed mobilisation and place identity (Breek et al. 2018, 2021). Through the analysis of two Facebook groups, the authors found how online affective placemaking on social media impacts the appropriation and significance of a place in a community, where place discourse is created collaboratively.

Projections on physical space

Puzzle Façade – this project brings the experience of a Rubik's cube to the urban space through an interactive experience. The façade of the Arts Eletronica Centre in Linz is transformed into a giant Rubik's cube, where people can interact with it as the façade tracks the rotation and orientation of a specially designed cube. The lights and colours on the media façade change in correlation with the cube that people interact with trying to solve it. This project was part of the Interface Culture Masters' programme at the Universität für Künstlerische und Industrielle Gestaltung in Linz (Austria) by Javier Lloret (2013). This work was mentioned in Chew et al. (2020) to understand the use of urban play in digital placemaking.

Vivid Sidney – is an annual public festival that celebrates creativity, innovation and technology. The festival is famous for its art installations and 3D light projections, transforming the urban environment, including Light Walks. Music is also used as a placemaking actor to create community, connecting the urban and natural environment with families, sense of belonging and stories. The

festival takes place in Sydney (Australia). This work is mentioned in Chew et al. (2020) exploring the use of playful digital placemaking to enhance sense of place.

Unnumbered Sparks – this monumental interactive sculpture is a crowd-controlled visual artwork on a giant and floating canvas. This project is a collaboration with Janet Echelman and Aaron Koblin (Vancouver, 2014): appropriation of landmark space w gamification. This work is mentioned in Chew et al. (2020) to analyse and describe playful urban artefacts in digital placemaking.

Connecting city life and culture – this project employed urban screens in two locations, one in China and another in Australia. Citizens were encouraged to dance in front of the screen, engaging in a virtual dance at real time with someone from the other location.

Sensorial technology

Take me to the Bridgewater – this project was created by Blast Theory to explore the place and the future with young people from the area in Salford (UK). The site-specific artwork along the Bridgewater Canal is a journey into the minds of the young locals, placing unfamiliar stories in new locations. The stories can be accessed using a smartphone, where the user is guided to discovering recordings hidden along the canal. This work is mentioned in Chew et al. (2020) to understand the use of urban play in digital placemaking.

Sankofa Red Payphone – this project used digital storytelling to strengthen community connections and share cultural stories to build sense of place. They used payphones and hacked them to share community stories. This project was studied by Stokes et al. (2021). They used participatory design to create greater insights. Locals could also record their own stories. One of their keys to success was to pair technology with an already known public object.

Airbnb Online Experiences – this feature created by Airbnb proposed a new way to travel from home. The platform hosted virtual tours and experiences connecting hosts in a desired country with virtual visitors. The experiences allowed the visitors to explore places through their senses, with cooking masterclasses for example. Despite being mostly visual, the visitors were guided to use other senses to connect with the desired place they were virtually visiting. These experiences were analysed by Norum and Polson (2021) to understand the use of digital place experiences as a medium and a developer of creating sense of place digitally.

Sound of CDMX – this audio/visual story explores the sounds of Mexico City's Street. This interactive website shows the different sounds and contexts of Mexico through a very appealing illustrated website. You can follow the story or

explore on your own. This project was created by Aaron Reiss and Oscar Molina Palestina (2022).

> **Despite not having real-time interactions and community engagement among the users, we found this example still valuable to be included as they explore the city and showcase the diverse identities and people in a very innovative way through sounds and illustrations.*

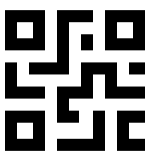
Location-based technology

Project Sidewalk – allows users to virtually explore the city streets of Amsterdam to find and assess accessibility issues. The labels are then used to improve city planning, build accessibility-aware mapping tools and train machine-learning algorithms to find urban accessibility issues. This project was led by Amsterdam City Council and principal investigators Jon Froehlich and David Jacobs (2012).

Tranquil Pavement London – this platform showcases tranquil spaces, streets, walks and community hubs in London. Their interactive map allows users to add tranquil spaces and post pictures and videos using the hashtag #tranquilcitylondon. This project was created by Tranquil City and a number of partners as well as public community groups and authorities. Tranquil City is a collective of environmental, psychological and data-science practitioners and researchers who aim to use their knowledge to benefit humans and the environment.

Queermaps.org – this interactive map is an explorable archive built to preserve and share the diverse LGBTQ+ history, organisations and events in Los Angeles (US). Users can submit a listing, filter locations and explore the place digitally.

Hello Lamp Post – is a communication platform for public space engagement. Users can engage with the platform using their mobile phones, where they can engage with others, answer public consultations, find places and discover stories as well as engage with tourism and cultural storytelling. This organisation was founded in 2018 and has worked in a number of cities in the UK. This work is mentioned in Chew et al. (2020) exploring playable digital placemaking in urban environments.



Augmented/Immersive reality

Pokémon Go – augmented reality app where people had to wander their neighbourhoods and public spaces in search of Pokémons and poke stops, competing with other players at virtual Pokémon Gyms (Hjorn & Richardson, 2017). These authors explore the idea of mobile location-based games and the different debates around this digital

placemaking experience, such as daily routines effects and the discriminations that can affect game users. The app used location-based technology and gamification.

Ingress game app – this AR game allows you to explore and interact with real-word landmarks to collect resources for the game. By Niantic Labs, the user pick a side and explore the universe battling other agents in real life locations via the portals of the game.

Woodland Wiggle – is an interactive game experience in the Children's Ward of the Royal London Hospital (UK). This interactive game allows children to enter into a storybook-illustrated world where they can paint, trigger different seasons, play music and interact with animals. The team worked closely with the clinical team in the hospital, where they develop a number of workshops to understand the range of movements and focus on the best health benefits for the children. These workshops influenced the format and design of the games created. The installations were made accessible to a wide range of abilities including wheelchair users, visually impaired or bed-bound children. This project was created by Chris O'Shea and Nexus Studios (2013).

MUTEK Festival – this digital creativity and electronic music festival. In 2020 and 2021 they created a hybrid platform to share virtual stages, including AR galleries, and workshops. This work is mentioned in Hespanhol (2022) to describe a series of challenges and guidelines for augmented (digital) placemaking after the COVID-19 pandemic.

The Lost Palace – this project invited people to explore the hidden spaces of Whitehall Palace (UK), interacting with their rich history. Through location-based AR the site was brought to life. A journey in public space for participants to revisit the historical storytelling of the Whitehall Palace was created by Calvium (2016).

Reveal – is an interactive story and immersive experience involving live theatre performance, online episodes, an AR treasure-hunt game and large-scale projections. This project was developed in King's Lynn town Centre (UK) as the setting stage for a play about a Syrian refugee making their way to Norfolk. This project was created by Collusion (2018).

INTERFERENCE – is an interactive tunnel for Design City Kolding (Denmark, 2014). The installation aimed to represent the two opposing trends in urban life: the need to be part of the community and the opposing desire to be alone in the middle of the rush. The tunnel has interactive lighting on its walls, focusing on creating a social place for walkers. This work is mentioned in Chew et al. (2020) to understand the use of games and playful designs in urban digital placemaking.

Migration Triptychs – this project aimed to capture the three stages of rebirth by telling the stories of residents of a specific location in Australia, who came to seek asylum from Iraq. The design of the triptychs included consultation with

different stakeholders, including community members. The triptychs were animated and played on urban screens at Macquarie Mall, Liverpool (Australia) Project mentioned by Dr Hespanhol (2018) in our data collection process.

TetraBIN – explores the use of digital technology to motivate positive urban change using game mechanics. The aim is to turn depositing rubbish into a bin into a joyful game (Chew et al., 2020). This interactive urban game allows users to collaborate by controlling light blocks on the screen. This is a project by the University of Sydney (Australia, 2014).

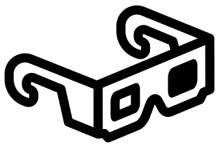
Sounds of Infinity – is an interactive infinity mirror that allows users to explore sounds' effects on illusion lighting effects in a laneway. This public art installation placed emphasis on the spontaneous exploration of voice and body in a public situation (Chew et al., 2020). Sounds of Infinity was developed in collaboration with the Willoughby City Council in New South Wales (Australia) for the Vivid Sydney Festival (2019).

Digitally Augmented Pop-Up Australian electricity supplier feedback on place management: an Australian electricity supplier created a series of digitally augmented pop-ups to obtain feedback from the community on the supplier place management and vegetation management program. The pop-ups were designed with the community in mind, and consisted of a selfie voting app, paper voting, and an AR trees game to create visual awareness of the consequences of tree growing in close proximity to powerlines. This was studied by Fredericks et al., (2018) to explore the use of pop-ups in public spaces for community engagement and participation.

Motiview – virtual cycling experience allow users to explore new and familiar locations through video cycling. They organise events where users can interact with each other and compete. Specifically focused on seniors and care homes, Motiview (UK) increases the level of physical activity, cognitive stimulation and social connectedness. Created by Motitech.

Hidden Cities – this project is formed by a series of apps for different cities that combine AR, digital placemaking and multi-language support. The cities are Valencia, Hamburg, Exeter, Deventer and Trento, where fictional characters lead users through the hidden stories of the cities. The cities are layered with a digital augmentation of their past to enhance their relationships. The project was created by Calvium and Professor Fabrizio Nevola (2019).

Virtual reality



We have not found a fully virtual reality digital placemaking experience to be included. However, it is possible to engage in a virtual reality experience that is linked to a specific

physical place while allowing users to engage with the virtual place and with others.

As part of GoGreenRoutes, we are developing a virtual nature showcase that will be presented at the different cultivating cities of the project. See section 3.4.2.

3.4. Digital Placemaking for Nature & Wellbeing

Humans are experiencing a disconnection with natural spaces, also shown in the degradation of these environments. Natural spaces in the city have been degraded, while their benefit to communities is proven in many areas. The experiences during the COVID-19 pandemic have helped consolidate the augmentation of urban places and the hybrid space (Hespanhol, 2022). In this scenario, we propose to benefit from the various technologies that surround us every day to help communities enhance their public place experiences, specifically reframing urban nature environments to make them attractive and community led.

Digital placemaking creates community engagement experiences that promote sense of place or place attachment while presenting accessibility and inclusion opportunities for all group members, combining physical and digital spaces in the hybrid reality experience. The results contributed to the role and use of digital placemaking as an augmentation of nature-based solutions that could promote consumer-nature connections and wellbeing effects while generating sense of place and place attachment.

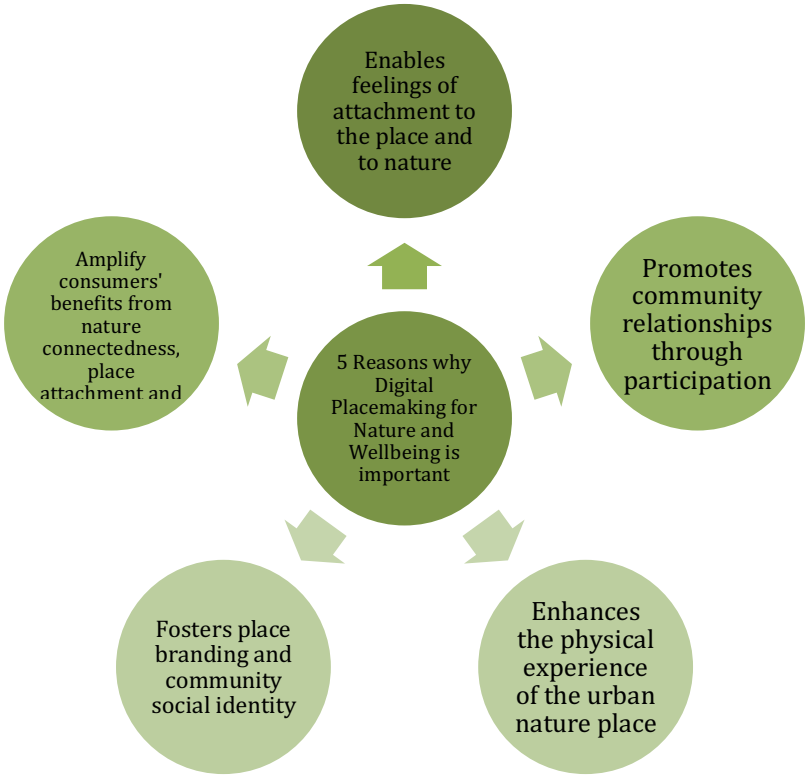
The Digital Placemaking for Nature & Wellbeing model proposed aims to amplify consumers' benefits (specifically wellbeing effects) by enhancing the urban nature place experience through digital media. The participatory place branding approach ensures the place brand and identity created naturally from the interactions of the community with the place will be taken into consideration and fuelled for and from the community.

To create this model, we have informed its steps with the hybrid place attachment modification to Scannell and Gifford tripartite (2010), the participatory place branding approach described by Zenker and Erfgen (2014), and Hespanhol (2022) guidelines for augmented placemaking. We have adapted, combined, and extended these frameworks to digital placemaking applied to urban nature environments to promote wellbeing, following our proposed theoretical framework.

Our Digital Placemaking for Nature and Wellbeing Model can potentially benefit communities in various areas (Figure 2). Through digital media augmentation and enhancement of public nature spaces in the city, digital placemaking can promote place attachment, community social identity, place branding and nature

connectedness. These different benefits and challenges from our model will be explored in section 3.4.3.

Figure 2 - Digital Placemaking for Nature and Wellbeing Model



3.4.1. Model steps

Digital placemaking can benefit consumers' wellbeing using technology as a mediator in nature-based place brand experiences. Our model is informed by our hybrid place attachment modification to Scannell and Gifford tripartite (2010), the participatory place branding approach described by Zenker and Erfgen (2014), and Hespanhol's (2022) guidelines for augmented placemaking.

Before applying the model, is essential to take into account the main digital placemaking elements found in our review applied to nature and wellbeing (Figure 3):

Community engagement – How is the community that lives and used the space? How are the connections among members? What do they derive from the space? How is the community dimension going to be approached, specifically the community element and social place?

- **Inclusion** – Are all the different groups in the community included? If not, are we ensuring we take into consideration the different group and decide who is included and who is not? How are diversity and accessibility ensured in the project?

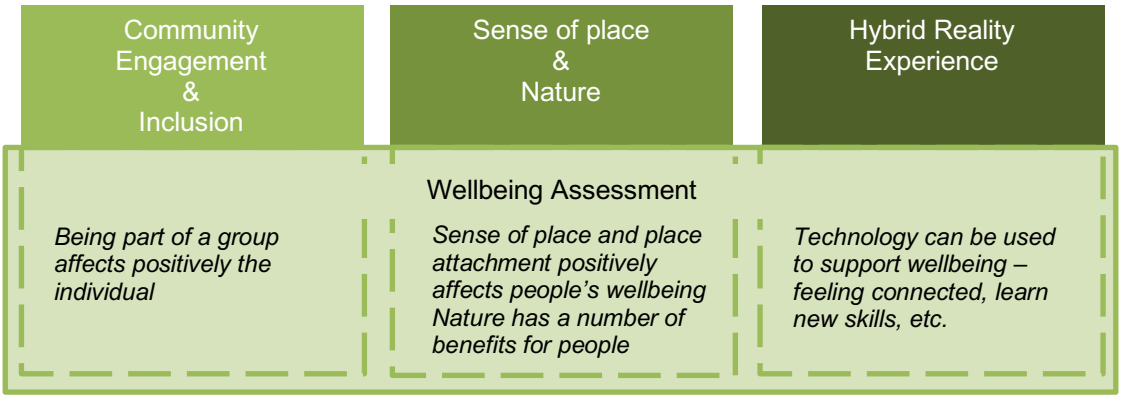
Sense of place – How is place attachment going to be promoted? How is the individual elements of the model approached – how is the characteristics of the place enhanced, the ability of it to allow social gathering and social exchange and what is the value of adding a digital layer to the physical? What aspect of the urban nature space are going to be explored?

- **Nature environment** – What aspects of the physical space is going to be enhanced in the experience? How is nature connectedness fostered in the experience?

Hybrid reality – What digital tool is going to be used to create the hybrid reality experience? What aspect of the physical reality is enhanced through online place attachment? How is the hybrid reality experience going to be for the community? What is the story or the purpose of the hybrid element?

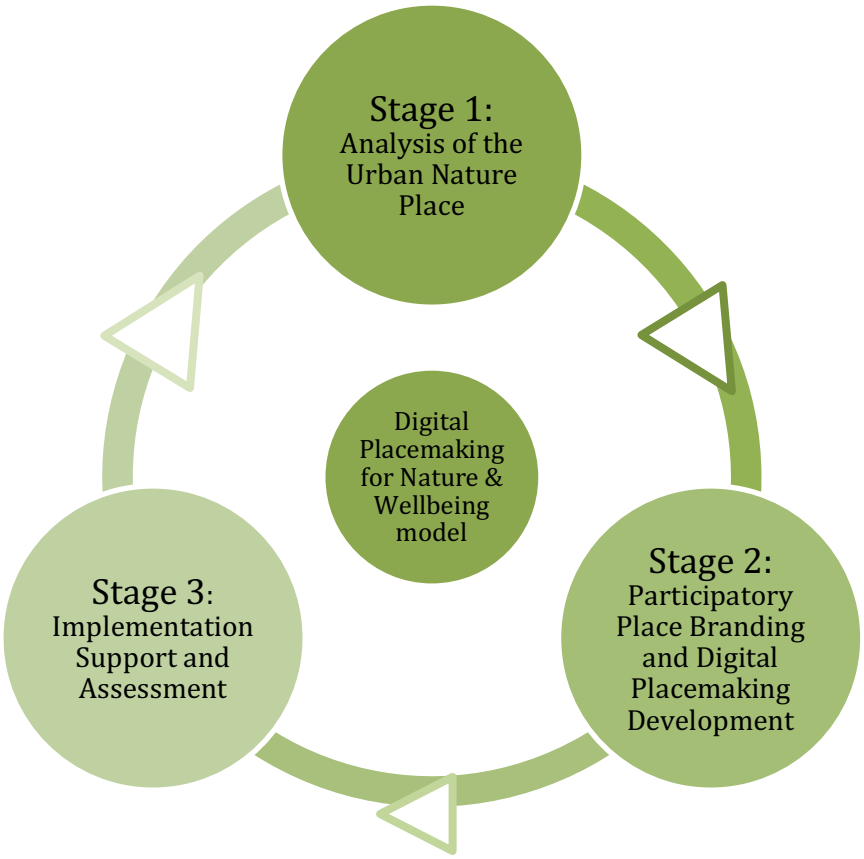
Wellbeing assessment – How is the assessment of the experience going to be approached? How is the emotion generated through the experience, the memories knowledge created through the experience and the actions going to be assessed? Are you doing a pre and post intervention analysis? How will you do this analysis?

Figure 3 Digital Placemaking for Nature & Wellbeing elements



Our model follows the structure of participatory place branding with three stages (Figure 4): analysis of the place, participatory development, and implementation support. We have adapted each stage to the context of our model, applying the hybrid place attachment modification proposed and following the augmented placemaking guidelines.

Figure 4 Digital Placemaking for Nature & Wellbeing model stages



1.1.1.1. Stage 1: Analysis of the Urban Nature Place

Digital placemaking for Nature and Wellbeing should be a bottom-up and inclusive process, therefore the community will be the main actor in the experience design process. To ensure this, some key questions need to be answered with and by the community, alluding to the hybrid place attachment dimensions. Some relevant questions we propose are:

What is the demand from the community in the space?

What are the requirements of the place and/or nature?

How is it going to be assessed?

What is the purpose of the experience?

How do we want to brand the space for the community?

How are we making the experience appealing and attractive?

How is the community engaged with the space? And among them?

How accessible and inclusive is the experience?

How does it promote feeling belonging with the place, wellbeing, a community identity and a brand of the place?

To answer these questions and promote new perspectives, different stakeholders need to be engaged in the design process of the experience. We advise to partnering up with different organisations and running online and offline events to motivate stakeholders and locals to take part in the process. It is crucial to follow Hespanhol's (2022) guidelines to ensure the diverse community is included in this stage. A working group will lead the organisation of the activities, but just as a facilitator where the main decisions and reflections will come from the community.

Tip: physical events with facilitators in the public space where the community can gather help to raise awareness, attract stakeholders and motivate discussions and involvement in the project.

1.1.1.2. Stage 2: Participatory Place Branding and Digital Placemaking Development

Once the analysis of the space, the community and its need are completed, the group will work on the specifications of the project. Some relevant questions that need answering in this stage are:

What technology is the most relevant to be used in the experience for the community and the place?

What is the physical place experience and how is it extended in the hybrid place experience?

What is the planned duration of the experience?

Who oversees which part? How is the community involved in this?

How are diversity, inclusion and accessibility going to be considered?

Do you need to do a pre intervention analysis as part of your assessment of the project?

We adapt the participatory place branding approach in this stage, moving away from budget structures – which will vary from project to project – and focusing on ensuring the development of the project and the participation of the community.

In this stage, the community will decide on the nature and the characteristics of the digital placemaking experience informed by stage 1. The development of the project will be participatory, ensuring the community take part in it and supervises the main goals and purposes.

Tip: storytelling is a great way to ensure the local story is shared and the community is empowered. Mixing heritage and nature can be a great way to motivate and enhance the benefits of the experience.

1.1.1.3. Stage 3: Implementation Support and Assessment

Once the experience is designed, it is time to support its implementation. Measuring and assessing the impact is crucial to understand how successful or relevant was for the community and the place and adapting and improving it.

We propose the model as an iterative process. After implementing and assessing its effects, the amendments and changes would be implemented following the same process: stage 1 of analysing, stage 2 of developing the experience and then stage 3 of implementing the changes.

Besides different marketing KPIs described in section 4.3., further scales and measures we propose specifically for the implementation of this model are:

Place branding measures (Zenker & Martin, 2011)

Citizen equity: sum of lifetime values of all customers (existing and potential). There are different ways of estimating customer value, depending on your objective (for aggregated value see Grupta et al., 2004; for individual level see Kumar, 2007). Citizen equity looks at citizen's value to the place based on future transactions and costs.

Citizen satisfaction: refers to the level of citizens' satisfaction with their place of living. Some examples of variables to measure are the citizen migration scale (Zenker & Gollan, 2010), published customer indexes (e.g., European Customer Satisfaction Index by Cassel & Ekloef, 2001; or Citizen Satisfaction Index by Zenker et al., 2009a), pride for a place (Azevedo, 2009), place satisfaction (Insch & Florek, 2010), among others.

Brand value driver: affects consumers' responses towards a brand, looking at the valuable information the consumer has on brand knowledge. This is measured on a non-monetary base, with variables such as brand awareness (brand recognition), brand image (strength of the uniqueness of brand associations) and image analysis of the place brand.

Place brand equity: refers to the difference between brand knowledge on consumer response to the marketing brand (Keller, 1993). Different scholars have approached how to measure place brand equity (Papadopoulos & Heslop, 2002; Jacobsen, 2009; Zenker et al., 2009b) but there is not a standardised measure for it yet.

Nature connectedness scale.

GoGreenRoutes is currently developing a Nature Relationship Scale (Murphy et al., upcoming GoGreenRoutes output) that will be used during the GoGreenRoutes Virtual Reality Showcase exploring virtual nature relationship. The Nature Relationship Scale looks at stages prior 'connectedness', exploring ways in which individuals build their own relationship with nature and how to continue to strengthen it. Other interesting scales are Connectedness to Nature Scale (CNS) (Mayer & Frantz, 2004) and Nature Relatedness Scale (NR) (Nisbet et al., 2009).

Social identity/ group belongingness scale.

Cameron (2004)'s 12 item multidimensional model of social identity measuring: centrality, ingroup affect, and ingroup ties.

Place attachment scales.

There are different scales to measure place attachment, we propose the Abbreviated Place Attachment Scale (APAS) (Boley et al., 2021).

Wellbeing assessment.

The World Health Organisation Five Wellbeing Index (WHO-5) is a usable example of wellbeing assessment. The WHO-5 is a short self-reported measure of current mental wellbeing. The World Health Organisation define Mental Health as: a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. Research supports the construct validity of the WHO-5 globally (Topp et al., 2015). GoGreenRoutes is developing a Mental Health and Wellbeing Scorecards that can be used as a wellbeing assessment in digital placemaking for nature and wellbeing (in progress).

Digital placemaking practices should be implemented with long-term goals and key performance indicators in mind, as we aim to facilitate behaviour change and pro-environmental behaviours in the community. Furthermore, our goal is to foster community nature connectedness and identity, which are also long-term processes.

Tip: Think about the specific characteristics of your project and choose the best assessment tools to understand how your goals are achieved and measured.

1.1.2. Examples and more

Melbourne Urban Forest Visual – e-governance platform to engage citizens in discussions, a digital context for citizens to engage in local place narratives and create new socio-cultural layers with the urban forest. There is also "tree data" exploration (urban canopy, graphics, tree life span, species diversity), a digital map of Melbourne's publicly managed trees indicating tree health and life expectancy, each tree has an email address and they received 'love letters' (Gulsrud et al., 2020)

> *This is a very well-rounded digital placemaking project that incorporates nature as a key element. The author refers to it as 'green placemaking' and this is a great example of a municipality-led project that includes a variety of technologies and interventions to engage with the community to inform and gather insights on the use of green spaces in the city.*

iNaturalist app – this nature app is a joint initiative of the California Academy of Sciences and the National Geographic Society. Their goal is to help users identify the plants and animals around them while connecting with a community of scientists and naturalists that can help to learn more about nature. Consumers can record and share their observations, creating research-quality data for scientists to aid them understand and protect nature. Uses take pictures that they share with other fellow naturalists, and they can discuss their findings with others.

> *This is a great example of global digital placemaking, where consumers develop place attachment and nature connectedness while engaging with other users.*

Geotourist app – this app is an audio tour app where you can find place experiences around the world and create your own immersive stories. It focuses on creating stories in travel, history, heritage, architecture, arts and entertainment.

> *There are multiple tours in nature spaces in the UK and Ireland in the platform, and there is a lot of potential for the creation of specific stories as part of a digital placemaking project. Within the app you can pick a journey, experience it, and share your feedback.*

AllTrails app – this outdoor mobile app collects a detailed map of hand-curated trails. This outdoor platform helps users to get outside and share their adventures from mountain treks to park strolls.

> *The outdoor community connection is also key in the app, where you can connect with other trail-goers and cheer each other. Trails can be found also in urban nature spaces.*

GoJauntly app – this nature-filled walking routes app has a number of walking routes and challenges in different locations in United Kingdom and Ireland. You

can also create walks and nature notes to record the good things you've experienced during your walk.

> *This app was created in collaboration with Bristol City Council and TranquilCity. The tours are photo-guided to help the user navigate the place. Despite the community engagement element not being central, this app has a lot of potential for its digital placemaking use.*

A Forest where Gods Live (2022) – the teamLab group employs non-material digital technologies to turn nature into living art pieces without harming it. Digital exhibitions and projects are used to materialise the digital nature concept that they explore. Specifically, in 'A Forest where Gods Live' they create a digital representation of the Mifuneyama Rakuen Park (Cambodia), exploring the forms of the forest and creating a place that transcends the boundary of time and place, accumulating meaning in Mifuneyama Rakuen Park. Different projects were developed by the team outside and inside the park, such as Life is Continous Light or Universe of Water Particles on a Sacred Rock

> *This art intervention to value the role of nature and give new meanings to an existing park is very interesting as per their use of technology. Projections, sounds and digital representations are employed to revalue the park. The community can find new meanings in the natural space but also engage with each other while experiencing the exhibitions.*

Digital Light Canvas – this project by teamLab was developed in the Marina Bay Sands (Singapore, 2017). This nature-based adventure project lets the visitor explore an ecosystem of flora and fauna, where they can also add their own personal creations to the installation and take them home as souvenirs. The led floor changes and presents the users with different elements, including personalised messages, or fireworks. This work was mentioned in Chew et al. (2020).

> *Another project by teamLab that combines digital nature representations that interact with the community. In this case, the floor is activated with the users and they can include personalised messages to appear.*

ARTE Museum – this museum in South Korea is the largest immersive media art exhibition organised by the digital design company d'strict. The exhibitions mix colours, lights and sounds and the artworks are created around the theme of eternal nature, such as the public digital artwork 'wave' (mentioned in Hespanhol, 2022)

> *Similar to the above, these immersive exhibitions represent different types of nature, from waves and beach environments to flowers and gardens where consumers can explore and relax through mindful experiences of virtual nature places.*

Nature Fix App – this Australian organisation has created guided nature-based audio routines that respond to a specific geolocation to improve human health and transforms green spaces into wellness spaces.

- *They implement science in their nature-based walks to create spaces for wellness supported by technology. There is also opportunity to leave feedback and share thank you notes to nature with other users.*

NatureDose App – this United States based app is a personalised nature prescription mobile app that monitors the time inside, outside and exposed to nature. Created by NatureQuant.

- *The team is currently working in adding social features and teamwork groups to achieve goals of time spent outside.*

Geocatching App – this app is a treasure hunting game that uses GPS technology. This type of augmented reality allow users to view a map of geocatches near them. Once they find the geocatche, they need to use the logbook to sign and date their finding and put the geocatche back in place after logging their experience online. Geocatches are created by the people and community. Furthermore, the app has a blog site where they share tips for the users of finding and creating geocatches but also environmental initiatives to take care of the planet

GoGreenRoutes Deliverables and Tasks

In GoGreenRoutes we have several tasks that involve technology, nature, wellbeing and communities. Some of them might not classify as digital placemaking activities per se, but they are great examples of creative and innovative ways to bring technology to communities for a value. Furthermore, they can be implemented in a digital placemaking project to ensure all characteristics of digital placemaking are taken into consideration. For example, the routing app can be part of a campaign to rebrand public spaces and include some community engagement activities to ensure the community voice is heard and further community relationships can be built through it.

Digital Media Library.

This centralised location will host media for all the cultivating cities. Citizens can upload images (JPEG, PNG), videos (video files including 360º videos uploaded to YouTube or Vimeo) and sound recordings (MP3s) to the library. All media will be permanently in the Oppla repository as a record of the legacy of GoGreenRoutes.

Emotional Mapping for each Cultivating City and emotion-aware green routes in each Cultivating City.

For the emotional mapping the team used geo-referenced Twitter textual data to extract the emotions of people in the urban green areas in the six Cultivating

cities. This data were extracted by using Twitter's official API which, by now, is the only one open for academic purposes. With various search instruments, it is possible to query Tweets related to natural places within the partner cities. To perform the Emotion Recognition Analysis in our model, they used XED a fine-grained emotion dataset, based on a neural network, that supports multiple languages. Citizens can see directly from the interface the predominant emotions: joy, sadness, anger, fear, trust, disgust, surprise, and anticipation, for each green urban area. The scope is to raise awareness of the advantages of urban nature to the citizens while gathering feelings of nature connection and mood enhancement.

Furthermore, the emotion-aware green routes in each Cultivating City aims to develop a routing toolkit to generate routes that are able to maximize exposure to nature in urban environments and increase, as a consequence, positive emotions. Data for the green and blue characterization of streets for the 6 cities are extracted from OpenStreetMap (OSM) (for green and blue spaces) and from the 2020 World Cover data from the European Space Agency (WCESA) (for tree coverage). These data were then integrated into OpenTripPlanner to generate a nature-aware routing engine. A modern interface is then built to maximize citizen engagement with the application. Citizens can use the routing app and find the routes that best suit their needs: walking in the shadow of a tree, near a river, in a park, etc. The routing application allows citizens in the six Cultivating Cities to identify urban routes that will maximize their exposure to several natural environments. The scope is to help people to enhance their exposure to nature by suggesting greener routes for their daily mobility, with a positive impact on their health, emotions, and well-being.

Web-app Accessibility to Green.

ATGreen is an interactive web platform that provides information about public green areas. It combines a user-friendly interface to study accessibility to public spaces. The platforms is beyond a data exploration tool but a resource that allows the user to build their hown indicators and test the impact of selected urban interventions. It combines open-source data and open-source software for the development of the framework and of the interface, making it extendable to any other city. It measures green accessibility with the operationalisation and computation of a set of indexes proposed by institutional bodies around the world. It also allows you to compare two indexes and crate your own by choosing the class of index you are interested in and setting your parameters and targets. You can also explore urban spaces in your city. Furhter functionalities such as ‘draw’ will be implemented soon. http://atgreen.hpc4ai.unito.it/about

Display of VR Experiential Showcase in all Cultivating Cities.

This task is a demonstration and dissemination. The GoGreenRoutes team will arrange events in all Cultivating Cities during which citizens can try the VR

Experiential Showcase. We created a VR installation, using a state-of-the-art VR-headset with “walk in Place Trackers and high-performance computer. Through this installation, citizens can “walk” in a virtual environment and, through a “magical portal”, can transition to a city environment (which reproduces an actual city) to a “greenified” version of the same city environment. For further improving the visual fidelity we are currently updating the project. The overall environment design is developed procedurally with SideFX Houdini; adjustable parameters are made accessible in UE through a Houdini Digital Asset (HDA). The city layout with buildings and roads is derived from Open Street Map (OSM) data. Tileable facade modules are modelled with Autodesk Maya and textured using Adobe Substance Designer as well as Substance Painter. Buildings with a specific shape (e.g., churches) are modelled individually with Autodesk Maya. 3D models of trees, bushes, grass and other foliage are obtained from the Unreal Marketplace. The community engage are citizens (teenagers, adults, and older adults) who can try the VR Showcase during the open events organized in the Cultivating cities. The experience is design to elicit feelings of nature connectedness and enhanced mood, as well as raise awareness of the benefits of urban nature. You can find more information through their YouTube channel (https://www.youtube.com/@gogreenvr5748) and check their kick-off events in Norway (https://GoGreenRoutes.eu/news?c=search&uid=KD6yMTX6Detailed).

KNOW Programme.

This GoGreenRoutes KNOW programme is being developed for use in amongst university students aged 18-25 across each of the cultivating cities, with a view to building the psychological resources and wellbeing of participants in tandem with bringing them closer to the nearby nature and outdoor spaces in their locality. The technology used is the Monsenso Digital Solution, which has been tailored to optimise the user experience and will allow for continued feedback to be provided across the duration of the implementation period. Users will download the mobile application and will be given access to a dynamic, user-friendly interface wherein the programme content will be hosted.

Over a six-week period, participants will be given the opportunity to engage with six modules of content, encompassing the following dimensions of resilience: Hope and Persistence, Sharing and Connecting, Sensitivity and Calmness, Clear Thinking and Problem Solving, Purpose and Values, and Healthy Habits.

Each module theme will be comprised of short snippets of psychoeducational reading material presented within the app, alongside a suite of five nature-based activities designed to encourage participants to engage with nearby nature and outdoor spaces in a meaningful and enriching manner. Each activity will be designed to bridge the gap between theory and its practical application, and will endeavour to connect the participants to the variety of natural elements in the local area through the five pathways to nature connectedness (Lumber, Richardson & Sheffield, 2017.).Participants will be given autonomy within their

engagement with the programme, with the suggested user journey advising them to select two-three activities that best fit their personal preferences for each of the themes.

Users will be surveyed at baseline and follow-up across a range of key outcome variables including psychological resilience, psychological wellbeing, and nature connectedness so as to evaluate the impact of the programme. More consistent ecological momentary sampling methods will be deployed within the app to determine user's levels of engagement with green space, sleep quality and mood state as they progress through the programme content. Feedback and monitoring of user engagement will also occur through the application in order to maximise the quality and impact of the user experience.

Diet, technology, and the impact on sustainability and green enterprise.

With the help of an SME partner, Nutritics, this task's research aims to beta-test a proposed novel software to determine whether consumer knowledge of sustainable practices among food retail establishments influences food choice. This research allows food service providers to inform customers of the environmental impact of food and drinks in their local eateries. This happens in three ways firstly the canteen uses clever software which calculates the footprint of the daily menu; secondly this information is displayed using a traffic light system for the consumer while also displaying the Co2 values of each meal and finally consumers are then allowed to answer a questionnaire which will be used to record consumers' food choices and motivators/barriers. Several questions will be posed to individuals interested in participating in the survey, which will occur at a catering food retail outlet. It is hoped that this will help the consumer to make informed food choices regarding eating more sustainably. The technology used is Food Print and the community is engaged through a survey that occurs at a public canteen in a nearby hospital. Signs will be displayed to highlight the significance of community support throughout the study. This study builds upon previous community engagement initiatives that gathered public opinion on food sustainability. One such initiative was an online survey that received responses from 45 countries and was sent to over 20,000 individuals. Further, local focus groups were held in Limerick to gather additional public opinion on food sustainability. The main goal of this project is to promote well-being by raising public awareness about the CO2 footprint of food. This will help people make healthier and more sustainable food choices. The project also includes additional research on the impact of spending time in green and blue spaces on our diet. Ultimately, the objective is to create a more sustainable environment by educating the public about the impact of our food system on the planet.

Proposed ideas

Wayfinding for nature: Make people aware of where the natural spaces are in your city. Many people do not go to green or blue spaces because they are not aware of where they are, how accessible are they, etc.

Imagine new futures: Facilitate how people can envision their future spaces. AR is a great tool for this and has been used in the past to show citizens the potential future improvements that can or will happen in a specific place.

Activity directory: Do people know what activities and experience can have in the green or blue space? Inform and propose activities for all the different profiles in the community to ensure they are inclusive and accessible.

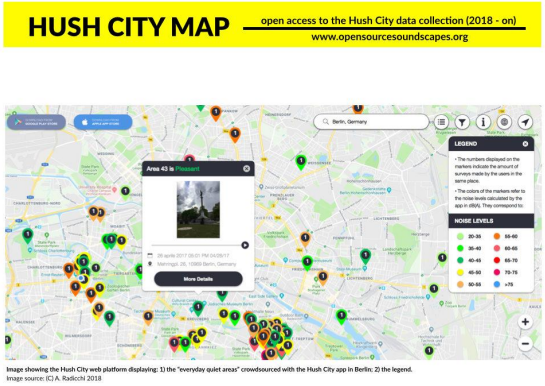
Storytelling: Mix information with stories. Tell people about the tree's characteristics, but also about emotions from the tree. Use arts as part of the storytelling to ensure the community becomes a participant.

Sensorial technology: Do not forget the sensorial aspect when designing a digital experience. Go beyond the visual element, what about sounds, smells, etc? Is there any existing element in the public space that we can turn and give new meaning using technology?

Use technology that already exists: Digital placemaking can be a high-cost experience. Before creating your own app or website, make sure you are focusing on the community and the place needs. Use existing apps for digital placemaking in your project – for example, iNaturalist community, create a WhatsApp group/Facebook group, use BeReal in your location, have an Instagram or TikTok profile for the place, create a Snapchat filter, etc.

BONUS - Citizen Science Apps: During our baseline monitoring, the GoGreenRoutes team has used several apps to measure soundscape, birdsong biodiversity, plant biodiversity or air quality. These are great easy to access apps that can be used as part of a digital placemaking experience. They might not be digital placemaking apps per se, but they can be used in combination with a physical activity in the place, asking a group to find the different bird songs in a space or taking note of the air quality. Some of these apps are:

Hush-City app: helps identify, access and evaluate quiet spaces. This free app empowers people to assess quiet areas in cities.



Source antonellaradicchi.it

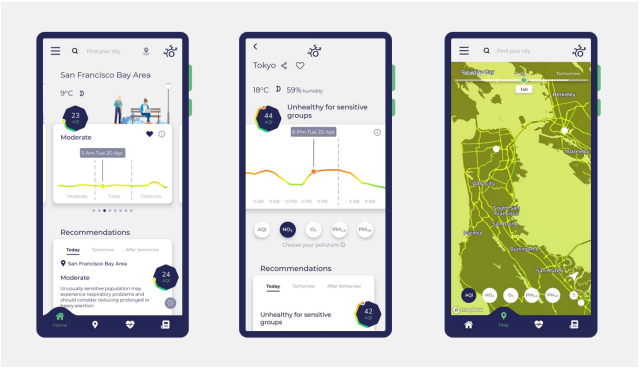
Warblr App: automatically recognises bird by their songs. It makes a recording using your smartphone, identifies the bird and provides with images and descriptions.

Source warblr.co.uk

LeafSnap: is a computer vision system for automatic plant identification. Uploading images using your phone camera enables the app to identify the plant species and provides further information.

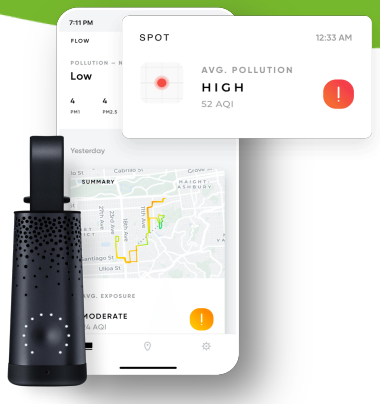
Source leafsnap.app

eLichens AQ App: this air quality app provides the user with relevant information about the air quality in a specific location. They use the Air Quality Index (AQI) to advice on air quality impact on your health. This is from GoGreenRoutes.



Source elichens.com

Flow: is a wearable sensor with a supporting App to monitor localised air quality providing feedback both with data and maps coloured to highlight different levels of pollution along routes.



Source plumelabs.com/en/flow

Tip: Ensure to adapt to the community needs and to ensure the digital placemaking for nature project you are developing fulfil the main characteristics of digital placemaking for nature and wellbeing:

It's a community engagement tool.

It's inclusive and accessible.

Creates a sense of place with the place and with nature.

Creates a hybrid reality experience mixing the online and the offline.

There are measurements in place, specifically looking at wellbeing assessment of the experience.

1.1.3. Potential benefits and challenges

To understand the numerous benefits described earlier in this toolkit from digital placemaking practices – community engagement, sense of place, cultural and economic growth among others – and the specific benefits we focus on when applied to urban nature environments to benefit consumer wellbeing, it is essential to describe the processes involved and their effect on the community.

Participatory place branding affects the way consumers and individuals feel attached and identify with a place, also affecting their behaviour. It creates influences and reinforces place images and associations (Warnaby & Medway, 2015). The participatory approach to place branding ensures the community is included in the design process of the digital placemaking experience, also linked and derived from place attachment, which affects the brand credibility and authenticity of a place (Debenedetti et al., 2014; Reitsamer & Brunner-Sperdin, 2021). Our model will help to further identify impact areas of branding practices beyond its economic and brand awareness dimensions.

Through the facilitation of place attachment, it also enables community belongingness and identity. Furthermore, the community engagement created through digital placemaking allow participants to generate a personal sense of belonging to a group. This group identification positively affects psychological wellbeing and contributes to urban regeneration (Haslam et al., 2009; Heath et al., 2017; Maricchiolo et al., 2021). Furthermore, excluded or marginalised members have the opportunity to connect with others and with the place through digital placemaking, due to it being an inclusive and barrier-free practice.

Finally, nature connectedness is also linked with emotional, psychological and wellbeing benefits (Capaldi et al., 2014; Pritchard et al., 2020). GoGreenRoutes is currently developing a number of activities and investigations in this area. Specifically, regarding the relationship between nature connectedness and wellbeing, place attachment has been also discovered as a positive mediator effect (Basu et al., 2020), also promoting pro-environmental behaviours (Gosling & Williams, 2010). Furthermore, virtual nature environments and nature connectedness are also currently being studied by our project. Therefore, digital placemaking applied to nature environments fosters nature connectedness and place attachment.

Digital placemaking applied to urban nature environments helps communities benefit from several wellbeing outcomes derived from enhancing their place experience, attachment to the place, with the community and with nature.

However, the potential risks and challenges derived from implementing digital media to mediate communities' interactions with space and among community members have also been described by many scholars. These challenges and risks need to be assessed prior to the experience and addressed during and after the implementation.

The main challenges and risks for digital placemaking applied to urban nature spaces are aligned with the limits addressed in **section 3.1.5**. In our model, we understand successful community engagement can be challenging. In GoGreenRoutes we look at risks or unintended consequences to create a mitigation plan.

Our study on digital placemaking applied to nature and wellbeing is ongoing and the results will be published and shared through GoGreenRoutes communication channels.

2. Marketing Plan

2.1. What is a Marketing Plan?

Creating a marketing plan for digital placemaking applications which involve engagement with nature can be a unique and challenging task. Traditional marketing strategies tend to focus on the promotion of goods and services (Kotler & Keller, 2006), whereas the 'product' being marketed in this instance is a service that requires significant input and effort from the 'customer'. Hence, the strategy should focus on reaching out to potential users who are interested in nature and outdoor activities and promote the app's features that encourage engagement with the core motivations of the initiative.

As a brief guide to the generation and development of a marketing plan, it is worth taking note of the following best practice principles when encouraging users to a highly engaging, immersive experience such as a nature-based digital placemaking initiative.

2.1.1. Marketing Planning Best Practice Principles:

Understand the target audience

The first step in developing a marketing strategy for a nature-based digital placemaking initiative is to understand the target audience. This involves conducting initial market research on the demographics, interests, and behaviour of potential users who are interested in outdoor activities and nature. This research will help in developing a suitable marketing plan that will appeal to the target audience and encourage them to engage with the initiative.

Define the unique value proposition:

It is important to define the unique value proposition of the nature-based digital placemaking initiative. A value proposition is what makes a product or service stand out from other nature-focused initiatives in the marketplace. This should be communicated through a brand name, logo, and event tagline. It's essential to highlight the key features that encourage engagement with nature, through promotion of healthy walking routes, or different species of plants and animals.

Create a dedicated website and social media accounts for each initiative

A dedicated website and social media accounts, such as Twitter, Instagram, and Facebook, can help in promoting the nature-based digital placemaking initiative and thus building a community of users. The website should include information about the initiative, its features, and how to download it. Social media accounts should be visually consistent with the app's brand and include regular updates on new features, user stories, and engagement campaigns.

Develop a content marketing strategy:

Content marketing is an effective way to promote the app and engage with potential users (Rowley, 2008). This can involve creating blog posts, videos, infographics, and other types of content that are relevant to the target audience's interests and showcase the unique features of the nature-based digital placemaking initiative. Any resulting content should be optimized for search engines and shared across social media platforms.

Run targeted advertising campaigns:

Targeted advertising campaigns can help in reaching out to potential users who are interested in nature and outdoor activities. This can involve running ads on social media platforms, search engines, and other digital channels that are relevant to the target audience. The ads should be visually appealing and highlight the unique value propositions of the initiative.

Leverage influencer marketing:

Influencer marketing is another effective way to promote the nature-based digital placemaking initiative and reach out to potential users. This can involve partnering with influencers who are relevant to the target audience's interests and have a significant following on social media platforms. The influencers can create sponsored content that highlights the features and encourages their followers to download and use the initiative.

Measure and analyze the results:

Measuring and analyzing the results of marketing campaigns is essential to determine their effectiveness and make necessary adjustments. This can involve tracking the number of app downloads, user engagement, social media metrics, and other relevant data. The insights gained from the analysis can help in optimizing the marketing strategy and improving the app's features to better engage with nature.

2.2. Contextual Marketing Plan

Developing a contextual marketing plan is crucial for the successful launch of a digital placemaking initiative. A well-designed marketing strategy will help create awareness, attract users, and ultimately drive engagement with the digital placemaking initiative.

A marketing plan typically involves several steps to ensure a systematic and effective approach to achieving marketing goals, and with respect to the promotion of the respective digital placemaking initiatives for each city (Section 3), the following stages of developing a marketing plan are suggested (Table 1).

Table 1: Stages for a marketing plan

Order	Stage	Description	Relevance for Digital Placemaking Initiative
1	Conduct a SWOT analysis	Before developing a marketing plan, it's crucial to assess the strengths, weaknesses, opportunities, and threats from conducting a digital placemaking initiative. This analysis helps understand the current situation and identify specific areas to focus on.	Analysis may point towards a long history of citizen affiliation with nature, however budget restrictions may hamper plans to create such an initiative.
2	Define your mission statement	Clearly state the mission statement, which serves as the foundation for all marketing and branding activities. It defines the purpose and direction of creating such an initiative.	A mission statement is a good opportunity to establish the parallels with the vision of the respective organisation (municipality) and the digital placemaking initiative.
3	Identify your target audience	Determine the specific group(s) of people you want to reach with your marketing efforts. Developing buyer personas can help you understand your target audience's needs, preferences, and behaviour	Personae of target groups can help to build a solid foundation for the initiative (e.g., time-poor, physically active)
4	Conduct market research	Gather information about current market trends, customer needs and the expected direction of the marketplace. This research provides insights into your target market's characteristics and helps you make informed decisions	Research may focus on usage of nature discovery, or nature-related mobile apps, as well as appetite for digital placemaking initiatives
5	Analyze competition	Study your competitors to identify their strategies, strengths, and weaknesses. This analysis helps you differentiate your business and develop	Analysis may reveal existing similar initiatives. In which case the initiative would need to be modified to differentiate itself from competitors

		competitive advantages.	
6	Set goals and objectives	Establish clear and measurable marketing goals aligned with your business objectives. These goals should be specific, achievable, relevant, and time-bound (SMART)	Marketing goals for the initiative could relate to raising awareness off, download/engagement with and ongoing sustained interaction with the initiative.
7	Develop a marketing strategy	Outline the strategies and tactics you will employ to achieve your marketing goals. This includes determining the marketing mix (product/service, price, promotion, and place) and selecting the appropriate marketing channels and platforms	In defining the strategy for the initiative, a focus on the produce/service and place would be pivotal, with supporting promotional activities on suitable digital channels.
8	Allocate a marketing budget	Define the financial resources you are willing to allocate to your marketing efforts. This budget should align with your goals and support the implementation of your marketing strategies	Build costs and ongoing maintenance of the initiative should be factored into decisions at this stage. Outsourced work from developers and creative agencies should also be considered.
9	Outline your marketing initiatives	Specify the content, campaigns, and initiatives you will implement to engage your target audience and promote the initiative. This includes creating a content plan, identifying key messages, and selecting appropriate marketing tactics	Content in relation to the initiative should be aligned with the ongoing work within the GoGreenRoutes project. However city-specific content on relevant social media channels is also important.
10	Assign responsibilities	Clearly define the roles and responsibilities of individuals or teams involved in executing the marketing plan. This ensures accountability and coordination throughout the implementation process	A marketing plan requires a marketing manager who is accountable and responsible for the development, promotion, implementation and evaluation of the initiative

11	Monitor	Regularly monitor the performance of your marketing plan through well defined key performance indicators (KPI) linked to the marketing objectives	KPIs should consider user interaction and engagement, but also further effects such as wellbeing and other physical effects of the intiative.
12	Evaluate	Analyze broader results of the campaign, gather feedback from users, and make necessary adjustments to optimize your marketing strategies and improve outcomes	Honest and clear reflections will produce better decisions for the improvement and optimisation of the initiative

2.3. Evaluation and Monitoring

As is the case with marketing plans, it is imperative to have an evaluation framework established in advance of the launch of the initiative.

An evaluation framework is a set of guiding principles that define what success is, and how that success will be measured. Central to evaluation activity is the ability to use a range of appropriate tools to match KPIs to marketing objectives.

The following Tale 2 is an example of an objective, KPIs and appropriate evaluation tools for evaluation and monitoring of marketing activity.

Table 2: Evaluation and monitoring of marketing activity.

Marketing Objective	KPIs	Evaluation Tool
To raise awareness of digital placemaking initiative amongst Personae Group A (time-poor, physically active, professional 20-somethings)	Website Unique monthly visitors (200-500 unique visitors per month), *click-through rate (>50% CTR from digital publications),* *bounce rate (less than 40% of incoming traffic),* *user dwell-time (at least 2.3 pages per visit),* *referral traffic from social media sources (>30% of incoming traffic),*	Google Analytics Matmo Analytics HotJar

	downloads of key media (whitepapers, articles etc. >25 downloads per month).	
	Blog *Blog Posts (1 blog post per week over the duration of the project, n= 48),* *Reader (>300 readers per month),* *Subscribers (>50 per month),* *Comments (average of 3-5 comments per post),* *Referral traffic to site (>20%)*	Blog Traffic Statistics, Google Analytics Matmo Analytics HotJar
	Social Media Channels *Social media accounts: (Twitter, Facebook Project Page, LinkedIn, Youtube Profile, Google Business Page),* *Followers/Fans (1,000 = 6 month target),* *Audience growth rate (>200 per month after 6 month),* *Comments (average of 10-15 comments per post),* *Shares (25% share rate from interactions),* *CTR (20% of traffic to site),* *Social share of voice (over 40% of social media conversations around initiative),* *Social sentiment (at least 45% of mentions in social content containing positive sentiment)*	Sprout Social, Facebook Insights, Twitter Analytics

3. Cultivating Cities Toolkit: Burgas (Bulgaria)

3.1. City Analysis from GoGreenRoutes City Factsheets

Burgas is the fourth largest city in Bulgaria, located on the Black Sea Coast. The city is on a peninsula on the Black Sea coast and has the Strandzha natural Park and the Burgas Mineral Springs. According to 2019, the population was 202434 inhabitants.

Within the scope of the GoGreenRoutes project, plans are to revitalise two urban areas in the city to provide urban spaces for wellbeing and recreation.

3.2. GoGreenRoutes Interventions

From previous work undertaken by the GoGreenRoutes teams, we can identify Burgas' local target area – Gurko Street and Oborishe – as a green urban zone used as a meeting space for the community. The area is referred to as 'Park Island' and provides the community with a recreation place allowing them to connect with nature and enjoy the sounds.

The park is mainly used by residents and the GoGreenRoutes goal is to encourage its use. Our team has worked with the community and professionals in the area to collate ideas for units to be added to be park: meeting spaces; interactive music installations; a multipurpose stage for yoga, tai chi, theatre, etc.; physiotherapy corner; water sculptures; wooden play area for children; and an accessibility improvement with pathways, bike racks and joint parking space

From our seedbed interventions developed with work package 3, the community manifested a series of needs or ideas to improve the future nature-based solution integrated through GoGreenRoutes.

Safety of the outdoor space for children 'We need a safe space for our children to play'.

Need for place to relax 'it's good to get a place for relaxation'.

Improve accessibility

Include community participation in the process to fully understand local population needs to promote a healthy lifestyle in the area

Need for a well-developed park as an urgent matter, which will help locals feel closer proximity with nature and the park

More green areas in their surroundings are requested

Risk of park maintenance beyond the project duration

The NBS in this city focuses on the construction of an abandoned green area in the city to turn the urban space into a small park. Park-island is a green urban

space detached from its surroundings and designed for recreation and maintaining good health through communication with nature, aromatherapy, sound therapy, arts, etc. The space will have a wooden podium used for yoga, tai chi, picnic etc. All furniture and elements will be made of natural materials and there will also be a physiotherapy corner as well as a music corner. There will also be water elements in the centre of the park.

3.3. Proposed Digital Placemaking for Nature & Wellbeing

We propose to implement our Digital Placemaking for Nature & Wellbeing model as part of the GoGreenRoutes intervention in the city. Especially, this is particularly relevant for the interactive music installation idea, but the rest of the proposed initiative will benefit from the technological and accessible mediation. Accessibility and community participation in the process of design for the 'park island' have been raised as concerns and desires from the local community.

The first stage of our model – analysis of the urban nature place – can be generic and inform several initiatives at some level. In this stage, existing GoGreenRoutes data can be used to understand the current needs and desires expressed by the community. However, we encourage having a specific participatory event where the model is presented to the community and the goals are co-created with them to inform the different ideas that have already been shared. Therefore, the specific questions we suggest in our model for the first stage need to be addressed for each initiative.

> **For example,** taking the interactive music installation experience, what specific needs of the community are we addressing and what specific needs of the space and/or nature? How are we measuring the effects of these installations? How accessible and inclusive are the interactive music installations? The answer to these questions needs to come from the community of the place, with the facilitation and help of the GoGreenRoutes and Cultivating City team.
>
> **For example,** wooden play is for children can have a technological mediation of sounds and lights that can be personalised through an app to make the play area experience interactive while making it accessible to diverse abilities. Another example could be the creation of a website or a digital platform for the park where the community can comment and exchange ideas, acting as a community forum but also as a place management tool and online meeting point.

Tip: These questions need to be adapted to the rest of the ideas but ensure the community reflects upon the use of any digital mediation for the experience.

The second stage is participatory place branding and digital placemaking development, where the community take ownership of the project. In this case, we suggest different community groups are either leaders of an idea that will be developed (e.g., interactive music installations group or the digital place platform group) taking full ownership of the initiative or are part of the initiative group. GoGreenRoutes team members and city members are also part of the group as facilitators and experts in interdisciplinary fields, where community members are also accounted as experts of the place and the community. Again, each initiative group works towards answering the questions suggested in our model and the development of the initiative.

For example, the interactive music installations can be hosted in the place platform, also easily accessible through mobile phones and maybe with an app where the place consumers choose among different sounds provided and can also suggest new sounds or create their own using the app.

Finally, the third stage refers to supporting the implementation of the initiatives and also assessing their effects. We provide several scales and tools to assess and measure different dynamics that occur in a digital placemaking experience. In the first stage of the model, we prompt the group to think about how to measure the effect of the initiative. The tools of assessment scales described in the first stage are used in the third stage. This process is iterative, and so after understanding the effects and potential improvements these are discussed with the working group and implemented.

Tip: it is useful to take pre-during-post measures, also getting feedback from the group about the process of co-creation to improve steps and make sure communication is always clear and open.

We encourage guiding the teams to make the experiences appealing and interesting for the community. Digital mediation not only has to answer the accessibility and inclusion requests but also to allow the community to discover stories and tell their stories, to create games and play with the place, and to enjoy nature beyond its physical attributes.

NBS Launch event

Before launching the GoGreenRoutes intervention, we advise to have planned a marketing strategy to communicate the event, have a digital presence in the city and share ideas, news and comments with the community. To do so, we suggest following our toolkit, specifically the marketing and digital placemaking for nature and wellbeing sections.

Some thoughts on this will be:

Online presence of the GoGreenRoutes targeted place: make sure there is a profile created in the main social media channels used by the community. For example, a Facebook group and a Twitter and Instagram profile.

Make a plan for the online presence and the launch of the GoGreenRoutes intervention: when is the intervention being launched? Make sure you inform about this using social media and digital channels. Inform prior to, during and after the intervention. Make sure there is a profile image and background, to have updated information of the location, the time and who to contact for any query or comment.

Check the channels and the inbox: make sure you are up to date on the comments and emails from the citizens. The online presence is an ongoing task, not something to set up and forget. It is a valuable channel of communication, so take care of it.

Is there any digital placemaking action that can happen on the day? Maybe you can have tasters of the different ideas gathered with the community on digital placemaking for nature and wellbeing. How about showing the users and citizens how to use the interactive music installations or the digital guide?

Interactive music installations

The GoGreenRoutes cultivating city team can implement our model for the design and development of interactive music installations. This will fulfil several of the ideas and concerns raised during the seedbed intervention such as the need for a place of relaxation, in this case through music, the desire for community participation in the design process to fully understand their needs, along with the goal of feeling close and empower through the park, and the improvement of accessibility. This installation can be hosted in the music corner.

The digital layer created, for example as an app, a platform, or an online form, needs to be participatory and appealing. Beyond the basics of user experience design to make it easy to navigate digitally, these installations can also have an element of gamification to make the experience fully immersive and engage with the community.

Here are some ideas for different experiences for the interactive music installations

Park Island Champions – the community has to discover the installations around the park answering some questions about nature that then allow them to listen to nature in different ways. Once all the installations are discovered a digital badge is created that they can share online as ‘park island champions’.

Sound mixers – the community can play and mix with the different sounds creating their own park anthem.

Park music stories – the community can share stories that are inspired by the music installations, as tweets or on different platforms. Some keywords can generate specific sounds that are then used in the music installations. For example, positive words have some specific tones involved in music compositions.

Digital guide

During the seedbed intervention, the community raised their desire to have a place for relaxation. Areas to stop and notice nature can be developed, where there is a space to sit, lay or stand and take notice of the surroundings. We suggest having some digital resources to help the community learn about ways of relaxing and taking notice of the place, as mindful exercises to try in this area.

These resources can be hosted in the place management platform, and easily accessed online and via mobile. They can also include a guided meditation in text and audio to play and follow in the space. For example, a specific audio guide for the space can be created using the Geotourist app.

Digital place management tool

Finally, as has been described earlier, we believe a digital place platform can be a key asset for the place. This platform can host different digital mediations of the initiatives suggested, also being an online meeting place and forum for the community with the municipality and different place stakeholders.

One of the concerns raised in the GoGreenRoutes forum organised during the seedbed intervention was the future problem of managing the park and the risk of its degraded maintenance beyond the project's time scope. To facilitate the management and maintenance of the place, our model is thought of as an iterative and long-term process.

Tip: This platform should be made accessible to all community members, including some notes in the physical place to inform them about the existence of the platform. Furthermore, this could be managed by the city but community members should take ownership of it an actively use it, seeing a real result from their comments and suggestions.

4. Cultivating Cities Toolkit: Lahti

4.1. City Analysis from GoGreenRoutes City Factsheets

Lahti is Finland's ninth-largest city by population. This city is situated in the south of the country and was recognised by the European Commission as the European Green Capital of 2021. The city is covered by green and blue spaces

(over the 80% of the city). Lahti is a city with extensive natural resources, where urban green areas consist mostly of forests with pathways and recreational structures for people to use such as bonfire sites.

The GoGreenRoutes city plan is to develop and pilot the concept of a 'health forest' next to a healthcare centre to support the wellbeing and recovery of the patients, staff and visitors, also open to all citizens.

4.2. GoGreenRoutes Interventions

The GoGreenRoutes intervention area is a park in the Kintterö nature conservation area, a 'health forest'. From the seedbed intervention, our team collected different testimonials regarding the sensorial aspects that help the participants connect with nature.

The guided sensory walk was perceived as 'emotional and comforting experience'.

The participants also highlighted the importance of making health more attractive and accessible

Other potential additions to the forest for this such as barrier free routes, adding signeted with icons for guide on sense and taking notice, swings chairs to relax or designated places to eat in silence.

These participants stated a reduction of stress levels and the importance of promoting health and making the forest accessible and barrier free for differently abled people.

The NBS intervention in this city is finished. The Lahti team had an opening event in 2023 where people gave feedback on how they envisioned the health forest in the future. This event had a number of activities such as accessible rout tours, tours for children, forest yoga and an art show in nature of wooden sculptures. There are two routes in the forest, one for the general public (3.5 km) and another which is accessible (1km). The forest is open all day and has lights in the accessible route.

There are plans to construct a yoga platform, benches and long trees to be ready for summer 2023. Currently, the city is recruiting companies to develop guidance plans and graphic materials for information tables to then build information sings in the area.

4.3. Proposed Digital Placemaking for Nature & Wellbeing

Again, we propose to implement our Digital Placemaking for Nature & Wellbeing model as part of the GoGreenRoutes intervention in the city. This is particularly relevant for the guided sensory walks which could be designed to have a digital support platform and the creation of a gamified experience for the signeted points in the forest, involving children and adults to discover the forest.

Each stage of the model should be followed.

The first stage will be also informed by the several initiatives and consultation interventions undertaken by GoGreenRoutes. We encourage having a specific participatory event where the model is presented to the community and the goals are co-created with them to inform the different ideas that have already been shared.

> **For example**, participants highlighted the importance of making nature more appealing, this can be done by creating a digital sensory walk guide to help them connect and take notice of nature. In this stage, the group needs to think about what needs of the community, the place and nature are being addressed, or how to address it better. How will the effect of the walk be measured, maybe with quick feedback after using it? How is the walk made accessible to different abilities? Etc.

The second stage is participatory place branding and digital placemaking development, where the community takes ownership of the project. Again, we suggest different community groups where the community is either the leader of an idea that will be developed or part of the initiative group. GoGreenRoutes team members and city members are also part of the group as facilitators and experts in interdisciplinary fields, where community members are also accounted as experts of the place and the community. GoGreenRoutes and city members will ensure groups are also informed about other groups' development and opportunities for collaboration are created. Each initiative group works towards answering the questions suggested in our model and the development of the initiative.

> **For example,** how is technology used to create the gamified experience of the forest? Who oversees this in the long term? Etc.

Finally, the third stage refers to supporting the implementation of the initiatives and also assessing their effects. Each group chooses the assessment tools and measures that will be optimum for their initiative. This process is iterative, and so after understanding the effects and potential improvements these are discussed with the working group and implemented.

> **NBS Launch event**

Since the heatlh forest has been already launched with an event, we suggest making sure there is a digital communication strategy for this NBS. To do so, we suggest following our toolkit, specifically the marketing and digital placemaking for nature and wellbeing sections.

Some thoughts on this will be:

Online presence of the GoGreenRoutes targeted place: make sure there is a profile created in the main social media channels used by the community. For example, a Facebook group and a Twitter and Instagram profile.

Make a plan for the online presence of the GoGreenRoutes intervention: Make sure you inform about the NBS through social media and the digital channels. Share access information, facilities, future events or activities, information about the nature in the space, etc. Make sure there is a profile image and background, to have updated information of the location, the time and who to contact for any query or comment.

Check the channels and the inbox: make sure you are up to date on the comments and emails from the citizens. The online presence is an ongoing task, not something to set up and forget. It is a valuable channel of communication, so take care of it.

Is there any digital placemaking action that can happen on the day? Maybe you can have tasters of the different ideas gathered with the community on digital placemaking for nature and wellbeing. How about showing the users and citizens how to use the digital sensory walk guide or the gamified points?

Digital sensory walk guide

During the seedbed intervention, different participants were involved in a sensory walk, and they perceived it as a very comforting experience, alluding to stress reduction levels. Furthermore, in the opening event many participants raised interest in obtaining more information about the forest, routes, difficulty, etc.

We suggest making this sensory walk accessible to all by creating a digital guide, where place consumers can be given prompts to take notice of the forest, the plants, the trees, the sounds, the breeze, etc. This guide does not need to be visual; it could be an audio guide or some signals that prompt them to use some digital tools to enhance the sensory walk experience. For example, a specific audio guide for the space can be created using the Geotourist app.

There is potential for the creation of a digital map that includes a sensory walk guide creating a deepen meaning of the nature-based solution initiative.

Gamification of forest points

In order to help make the forest more accessible and inclusive, the participants of the seedbed interventions referred to the importance of having barrier-free routes with special places to relax and connect with nature.

We propose a gamification of the signals created in the route – also suggested during the seedbed intervention – but as a ‘cozy game’ (Waszkiewicz & Bakun, 2020) that refers to the slowness of the pacing of the game to create a meaningful play with repetitive and plain actions.

The gamified park experience can employ the physical signals in the park to prompt the community to stop and take notice (using QR codes to take the users to a specific app or task – see section 3.4.2.). They can explore a specific aspect of that point in the forest using their mobile device or an ‘urban screen’ (a ‘park

screen' in this case). The use of this cozy gamification of the forest would help make the experience accessible and inclusive but also make it appealing to the community and place users. Geocatches can be created around the forest to enhance the experience and gamify the routes.

Tip: This suggestion is a great tool to include local stories in the forest gamification.

5. Cultivating Cities Toolkit: Limerick

5.1. City Analysis from GoGreenRoutes City Factsheets

Limerick is the third largest city in the Republic of Ireland, situated 60km inland from the Atlantic Ocean, at the head of the broad River Shannon estuary. This city was awarded the UNESCO Learning City in 2014 and European Green Leaf in 2020. The GoGreenRoutes intervention is to update the Castletroy Greenway, connecting primary schools in the area.

5.2. GoGreenRoutes Interventions

The intervention aims revitalise the new 1.2-kilometer Castleroy Greenway. Castletroy Greenway creates a new route connecting local schools to housing estates, play areas and local amenities such as grocery stores, garden centres and both indoor and outdoor fitness facilities. For the intervention, GoGreenRoutes incorporated participants recommendations from a public walk and different suggestions from other activities that occurred since the project started. This greenway is now a popular cycling and walking path in the city and the residents were interested in growing native species along the path to promote ecological biodiversity, provide with more accessible areas of rest and a place for children to engage with nature. Moreover, enhanced walkability and commutability through greenway creation reduced end to end walk time from 25 to 30 minutes down to 10 to 15

The seedbed intervention in the city included temporary natural playgrounds, workshops on building bug hotels for children and tents with coffee for discussions and testimonial collection. This seedbed has since been made into semi-permanent natural playgrounds due to its success.

Among the different ideas for the intervention, participants suggested to create ecological corridors for wildlife movements, to provide with active travel routes that will encourage healthier lifestyles, allowing more opportunities to engage with nature to improve wellbeing as well as improving the air quality and reducing flood risks.

Participants shared different ideas and suggestions such as 'edible gardens', spaces to grow food and more wildflower areas.

They encourage the greenway to be made attractive, having some sort of decoration to make it vibrant.

Furthermore, including spaces or amenities for children and other experiential activities was crucial for this.

To learn about the biodiversity in the area and the plants around was also highlighted as a need for the greenway.

Most participants mentioned experiencing nature for the reduction of stress levels, the value of learning aspects triggered by natural features and to use spaces for local food production.

All these community engagement efforts had the goal of making the pathway interesting for people over time. There are identifying signs in the place and visual points for people to understand the nature around both in English and Irish. These signs are 'friendly and visually appealing'.

The NBS intervention in Castleroy includes several inclusive amenities for all users, aligning play, physical activity and recreation with the enhancement and promotion of biodiversity for nature connection. The greenway provides with a space to sit, pause, enjoy, play and monitor and conserve over time. Some key aspects of the greenway are the wooded sculptures, murals and signage. There are different data collection and measurement of biodiversity taking place.

5.3. Proposed Digital Placemaking for Nature & Wellbeing

The implementation of our model can help to ensure the intervention in Limerick includes accessible options and resources for the community when ensuring the place is attractive to all, inclusive and accessible as well as stewardship feelings towards the Castleroy Greenway.

All suggestions made by the community are physical amenities to make the place attractive, healthy and accessible for all. In this instance, we propose some digital placemaking initiatives to enhance these experiences. The proposals should follow our model to ensure the community leads these ideas and take ownership of the place and the initiatives.

The first stage will be also informed by the several initiatives and consultation interventions undertaken by GoGreenRoutes. We suggest having a specific participatory event where the model is presented to the community and the goals are co-created with them to inform the different ideas that have already been shared.

> **For example,** participants encourage the importance of making the place attractive and learning and safeguarding the biodiversity of the place. The community-led bioblitz organised could help people learn about the different

species and plants, intertwined with some local stories to make a guided walk (online platform and audio guide) appealing by mixing information and storytelling. In this stage, the group should consider the need that this walk will cover, the characteristics of the place but also the accessibility and inclusive perspectives taken into consideration, etc.

The second stage is participatory place branding and digital placemaking development, where the community takes ownership of the project. We suggest different community groups are in place for each initiative. The community is either the leader of an initiative that will be developed or part of the initiative group. GoGreenRoutes team members and city members are also part of the group as facilitators and experts in interdisciplinary fields, where community members are also accounted as experts of the place and the community. GoGreenRoutes and city members will ensure groups are also informed about other groups' development and opportunities for collaboration are created. Each initiative group works towards answering the questions suggested in our model and the development of the initiative.

For example, how is technology used to create the biodiversity walk experience of the greenway? Who oversees this in the long term? Etc.

Finally, the third stage refers to supporting the implementation of the initiatives and also assessing their effects. Each group chooses the assessment tools and measures that will be optimum for their initiative. This process is iterative, and so after understanding the effects and potential improvements these are discussed with the working group and implemented.

NBS Launch event

Before launching the GoGreenRoutes intervention, we advise to have planned a marketing strategy to communicate the event, have a digital presence in the city and share ideas, news and comments with the community. To do so, we suggest following our toolkit, specifically the marketing and digital placemaking for nature and wellbeing sections.

Some thoughts on this will be:

Online presence of the GoGreenRoutes targeted place: make sure there is a profile created in the main social media channels used by the community. For example, a Facebook group and a Twitter and Instagram profile.

Make a plan for the online presence and the launch of the GoGreenRoutes intervention: when is the intervention being launched? Make sure you inform about this using social media and digital channels. Inform prior to, during and after the intervention. Make sure there is a profile image and background, to have updated information of the location, the time and who to contact for any query or comment.

Check the channels and the inbox: make sure you are up to date on the comments and emails from the citizens. The online presence is an ongoing task, not something to set up and forget. It is a valuable channel of communication, so take care of it.

Is there any digital placemaking action that can happen on the day? Maybe you can have tasters of the different ideas gathered with the community on digital placemaking for nature and wellbeing. How about showing the users and citizens how to use the gamified spots or guided walk?

Gamified spots along the Greenway

There is an opportunity to make the greenway more appealing by adding extra value to different zones and areas along the path. We suggest including some further information in the existing signs or adding others signs as stops for a gamified experience, especially for children. In this proposal, children can complete some easy tasks along the way, where they can learn how to connect and care for nature, protecting the biodiversity of the Castleroy Greenway.

These gamified spots can have some QR codes that lead the children to specific tasks – for example, identify bird's sounds using an app (e.g., Warblr), answer correctly to 3 questions about this specific local plant, collect three types of stones and build a bug hotel in 5 minutes or collect different types of leaves in Autumn. The stops and tasks are thought to be overseen by the parents or legal guardians of the children, helping and learning with them along the way.

There is potential to create geocatches in the space for people to treasure hunting them and explore the place from a different lens.

Guided biodiversity walks

The importance of biodiversity was key in the seedbed intervention results. Participants encourage the importance of making the place attractive and learning and safeguarding the biodiversity of the place. Therefore, we suggest the creation of a digital guided biodiversity walk, where people can learn about the different species and plants, intertwined with some local stories to make the guided walk. This can be hosted in an online platform with an audio guide, mixing information and storytelling. Include citizen science apps in the walk, to ensure the users learn and interact digitally with the place and with others. See section 3.4.2. An audio guide can be created using Geotourist app.

Tip: This guided walk is an opportunity to engage with nature and improve the wellbeing of its consumers as it can help lower stress levels.

Digital Archive

The pathway has hosted a number of activities, some of which has been made semi-permanent. We suggest creating a digital archive of experiences, reflections and activities that had taken place in the space. This digital archive can show the before and after of the pathway, stories in the community and future ideas when envisioning the space.

There could be QR codes in targeted places in the pathway that take the users to the digital archive and an option to submit their own feedback or story in the place. We suggest hosting the archive in the municipality website.

6. Cultivating Cities Toolkit: Tallinn

6.1. City Analysis from GoGreenRoutes City Factsheets

Tallinn is the capital of Estonia, situated on the southern coast of the Gulf of Finland. This city has been listed among the top 10 digital cities in the world and granted the title of European Green Capital in 2023. 20 out of their 61 parks are protected natural objects. The GoGreenRoutes target area in Tallinn is the Vormsi Park.

6.2. GoGreenRoutes Interventions

The GoGreenRoutes intervention planned in this city is an outdoor recreational field and a new urban rain garden for the residents. The Vormsi Park is situated in the eastern part of Lasnamäe, within walking distance from the homes of locals and between Estonian and Russian-speaking groups.

The goal of the intervention planned is to bring community members together so that they can co-design a new urban garden to increase social interactions and reduce stress levels. Following Tallinn's residents' decision, there is a focus on the management of the local trees and the creation of a rain garden to give additional opportunities for leisure.

The GoGreenRoutes seedbed intervention collected different ideas and perceptions from the participants on the needs of Vormsi Park.

Accessibility paths for all abilities was a key element, as well as specific areas to enhance elderly interactions and lifestyle as well as safe space for children and animals.

Areas to promote community engagement and comfortable interactions were raised, such as benches for the elderly.

Safety was a key element broad by different participants, as the natural area has significant tree canopy cover and lacks the visibility and sightlines associated with personal safety.

Place maintenance was also highlighted to ensure the space stays clean and vandalism is reduced.

Ecological diversity was another element to be preserved and increased in the future nature-based solution intervention.

In general, the participants value and appreciate the existing green space but several suggestions were made to ensure the space is accessible and safe for all, as well as promote community interactions and ownership through participation. They believe the space should remain natural.

The city had loads of contact with the community and a good involvement of the district. One of the goals of the city is to develop a city-wide coherent green network through projects such as the Pollinator Highway, a meadow rich in species. To develop the green network, the city has employed a number of participatory methods such as the AR app Avalinn, which allowed to envision the future of the space. Other digital tools such as a field map Geographical Information System (GIS) app or Maptionnaire Citizen Engagement platform were used to enable city planners collect local insights and make GIS-backed decisions.

Therefore, the NBS intervention in the city will aim to increase accessibility to the existing urban wilderness. This includes creating walking paths and recreational spaces, maintaining vegetation and introducing landscaping solutions for a seasonal wetland area. The NBS will combine the value and maintaining of the place but also to increase the accessibility and create recreational as well as educational possibilities in the pilot area. There are plans to increase lightning in the area for feeling of safety and accessibility as well as to preserve historical orchard. There will be need to cut down trees with low ecological value that are blocking the sunlight. There are plans to create sitting places and install information boards about ecological and historical values of the area.

6.3. Proposed Digital Placemaking for Nature & Wellbeing

The main goals are to bring the community members together, fostering healthy lifestyles and safe spaces for the elderly and children. Accessibility and place maintenance were also raised concerns by the participants of the seedbed intervention. Therefore, we suggest improving these interventions with digital placemaking initiatives to ensure the green space is appealing and valuable for the community.

We suggest creating a digital place management platform where locals and consumers can interact with the place digitally, share ideas, raise concerns, and organise themselves. Furthermore, we propose this platform to host a social forum where those who cannot attend the place regularly can also be updated and engage with the community.

The involvement of the community in the co-creation of the space was also very valuable for the participants of the seedbed intervention. Therefore, we propose

to follow the Digital Placemaking for Nature & Wellbeing model for the creation, design, and management of the platform.

The first stage of this model will be informed by the several initiatives and consultation interventions undertaken by GoGreenRoutes. We suggest having a specific participatory event where the model is presented to the community and the goals are co-created with them to inform the different ideas that have already been shared.

> **For example,** to answer the need for place management and maintenance and community engagement, we propose the creation of a digital place management tool. However, this proposal will be decided by the community if they see a value in this or not and what elements or characteristics they want to focus on for the platform. The community should discuss their needs and the needs of the space, how to answer them, how to make the place accessible, etc.

The second stage is participatory place branding and digital placemaking development, for the community to take ownership of the project. We suggest different community groups are in place for each initiative. In this case, we propose one initiative and so the community should own the initiative and be the leader of each stage. The GoGreenRoutes team members and city members are also part of the group as facilitators and experts in interdisciplinary fields, where community members are also accounted as experts of the place and the community. GoGreenRoutes and city members will ensure groups are also informed about other groups' development and opportunities for collaboration are created.

> **For example,** how is technology used to enhance the solution they have chosen? Who oversees this in the long term? Etc.

Finally, the third stage refers to supporting the implementation of the initiatives and also assessing their effects. Each group chooses the assessment tools and measures that will be optimum for their initiative. This process is iterative, and so after understanding the effects and potential improvements these are discussed with the working group and implemented.

> **NBS Launch event**

Before launching the GoGreenRoutes intervention, we advise to have planned a marketing strategy to communicate the event, have a digital presence in the city and share ideas, news and comments with the community. To do so, we suggest following our toolkit, specifically the marketing and digital placemaking for nature and wellbeing sections.

Some thoughts on this will be:

Online presence of the GoGreenRoutes targeted place: make sure there is a profile created in the main social media channels used by the community. For example, a Facebook group and a Twitter and Instagram profile.

Make a plan for the online presence and the launch of the GoGreenRoutes intervention: when is the intervention being launched? Make sure you inform about this using social media and digital channels. Inform prior to, during and after the intervention. Make sure there is a profile image and background, to have updated information of the location, the time and who to contact for any query or comment.

Check the channels and the inbox: make sure you are up to date on the comments and emails from the citizens. The online presence is an ongoing task, not something to set up and forget. It is a valuable channel of communication, so take care of it.

Is there any digital placemaking action that can happen on the day? Maybe you can have tasters of the different ideas gathered with the community on digital placemaking for nature and wellbeing. How about showing the users and citizens how to use the digital place management platform?

Digital place management platform

We suggest creating a digital place management platform where locals and consumers can interact with the place digitally, share ideas, raise concerns and organise themselves. Furthermore, we propose this platform to host a social forum where those who cannot attend the place regularly can also be updated and engage with the community.

The idea of the platform is to be a place for sharing concerns and ideas, informing about Vormsi Park, and organise groups and dynamics but also to allow those that cannot regularly attend and experience the place to stay in the loop and engaged with the community. Therefore, this platform can host different digital mediations of the initiatives suggested, also being an online meeting place and forum for the community with the municipality and different place stakeholders.

The platform can be set up and managed by the municipality, but the community should own it and feel that their comments and suggestions are taken into consideration. We propose the park to have a group of community volunteers that manage the platform with the municipality.

Tip: This platform should be made accessible to all community members, including some notes in the physical place to inform them about the existence of the platform. Furthermore, this could be managed by the city, but community members should take ownership of it and actively use it, seeing a real result from their comments and suggestions.

Digital guided walks

We suggest the creation of a guided walk as a digital guide, where people can learn about the different species and plants, intertwined with some local stories to make the guided walk appealing by mixing information and storytelling. Include citizen science apps in the walk, to ensure the users learn and interact digitally with the place and with other. See section 3.4.2. For example, a specific audio guide for the space can be created using the Geotourist app.

This digital guided walk can ensure accessibility, making the place accessible to all by ensuring all citizens have access to information of the place and can join a guided walk adapted to their needs.

7. Cultivating Cities Toolkit: Umeå

7.1. City Analysis from GoGreenRoutes City Factsheets

This fast-growing city in Northern Sweden, located at the north of Stockholm. The population was 125080 inhabitants in 2018. The GoGreenRoutes vision is to create a high-quality, multifunctional, accessible and inclusive public green space, considering the climate challenges of the city.

7.2. GoGreenRoutes Interventions

The local target area in Umeå is the Bölevägen route, the 'green lungs' of the city to tackle air pollution and encourage active travel through gender-sensitive planning.

This route combines traffic-related pollution and Umeå's cold climate, which keeps emissions from motor vehicles at the street level. In this context, the air quality is very poor and there are different adverse health effects. Therefore, the GoGreenRoutes intervention's objective is to make the Bölevägen route more attractive and healthier, turning it into a public space to encourage the safety of residents and more active travel, prioritising walking and cycling.

The two main goals of the intervention are to seek visual and functional integration of the green space to support air quality improvement, and to leverage the gender-sensitive urban planning to benefit from ecosystem services provided in the area.

The aim of the seedbed intervention in Umeå was to collect ideas on the design of the green areas in Bölevägen while raising awareness of the possibilities of re-designing the surroundings of this place.

The participants of the seedbed intervention appreciated the different activities organised such as concerts and talks.

They suggested including areas to rest and enjoy the space in different ways for the different users, from playgrounds for children to benches for the elderly and the families.

More trees and plants to create shade and better environments were requested but sunspots were also appreciated.

Most respondents valued the green areas as places for stress reduction and to design green spaces in favour of benefiting biodiversity.

The NBS intervention in the city will be the reconstruction of a street to make it more attractive for active travel and the development of four pocket parks. Recycled materials and the regreen of the areas will be key as well as ensuring safety of the locals through street lighting. The NBS is based on the below seedbed intervention and other surveys and consultations with the community.

7.3. Proposed Digital Placemaking for Nature & Wellbeing

As one of the goals of the intervention is to leverage gender-sensitive urban planning, we propose to follow our model to ensure community participation is at the heart of the co-design of the space but also the community is empowered and takes the lead on the decisions.

Therefore, we suggest having different gamified hybrid spots across the area to inform about the space, suggest ways of enjoying the space, share local stories and make the place attractive. To design these spots, we propose following our model.

The first stage of this model will be informed by the several initiatives and consultation interventions undertaken by GoGreenRoutes. We suggest having a specific participatory event where the model is presented to the community and the goals are co-created with them to inform the different ideas that have already been shared.

> **For example,** to make the space appealing and attractive but also inform about different healthy lifestyles and connect the community, several gamified hybrid spots are suggested. However, this proposal will be decided by the community, focusing on their needs and the place's needs. The community should also discuss branding approaches, accessibility and inclusion of the initiative, etc.

The second stage is participatory place branding and digital placemaking development, for the community to take ownership of the project. In this case, we propose the initiative to be led by the community. The GoGreenRoutes team members and city members are also part of the group as facilitators and experts in interdisciplinary fields, where community members are also accounted as experts of the place and the community. GoGreenRoutes and city members will

ensure groups are also informed about other groups' development and opportunities for collaboration are created.

> **For example,** how is technology used to enhance the solution they have chosen? Who oversees this in the long term? What is the value of the hybrid spots designed? Etc.

Finally, the third stage refers to supporting the implementation of the initiatives and also assessing their effects. Each group chooses the assessment tools and measures that will be optimum for their initiative. This process is iterative, and so after understanding the effects and potential improvements these are discussed with the working group and implemented.

NBS Launch event

Before launching the GoGreenRoutes intervention, we advise to have planned a marketing strategy to communicate the event, have a digital presence in the city and share ideas, news and comments with the community. To do so, we suggest following our toolkit, specifically the marketing and digital placemaking for nature and wellbeing sections.

Some thoughts on this will be:

Online presence of the GoGreenRoutes targeted place: make sure there is a profile created in the main social media channels used by the community. For example, a Facebook group and a Twitter and Instagram profile.

Make a plan for the online presence and the launch of the GoGreenRoutes intervention: when is the intervention being launched? Make sure you inform about this using social media and digital channels. Inform prior to, during and after the intervention. Make sure there is a profile image and background, to have updated information of the location, the time and who to contact for any query or comment.

Check the channels and the inbox: make sure you are up to date on the comments and emails from the citizens. The online presence is an ongoing task, not something to set up and forget. It is a valuable channel of communication, so take care of it.

Is there any digital placemaking action that can happen on the day? Maybe you can have tasters of the different ideas gathered with the community on digital placemaking for nature and wellbeing. How about showing the users and citizens how to use the gamified spots?

Gamified hybrid spots

From the peculiarities of the GoGreenRoutes intervention and the needs and desires expressed by the seedbed intervention participants, there is an opportunity of making the green space appealing and attractive while creating points for healthy lifestyles, learning and playing through gamified hybrid spots.

We suggest including some signs as stops for a gamified experience. These hybrid spots are accessed through a digital device (either a smartphone or an urban screen displayed in the area) and host different tasks that create a local story in the place while sharing interesting facts from the local area and the biodiversity, games for children and reflections. The aim is for the community to learn how to connect and care for nature, protecting the biodiversity of the Bölevägen route.

These gamified hybrid spots can have some QR codes that lead to specific tasks – for example, identify bird sounds, answer to 3 questions about a specific local plant, information about the benefits of nature in that specific space, etc. When children are involved, the stops and tasks are thought to be overseen by the parents or legal guardians of the children, helping and learning with them along the way. Include citizen science apps to ensure the users learn and interact digitally with the place and with other. See section 3.4.2.

There is potential to create geocatches in the space for people to treasure hunting them and explore the place from a different lens.

Tip: Make sure these spots are also created as safe places for the community, with different elements to ensure the community can find a place to relax and safely engage with the tasks.

Soundscape App

A master student, Tjeu van Bussel, developed the Serea app, a soundscape app that aids citizens to wander the place in the moment, guiding them through green touchpoints. This app combines GPS and compass with a DIY cardboard kit that the citizen receives in their mailbox.

There is a big opportunity to apply this project to the NBS in the city by ensuring there are touchpoints and guided soundscape in the NBS space and informing locals about the availability to use the app to explore and find new meanings in the place.

The development process of the app followed the main elements of digital placemaking through a small case study and researching through making, engaging and experimenting.

8. Cultivating Cities Toolkit: Versailles

8.1. City Analysis from GoGreenRoutes City Factsheets

Versailles is famous for the Chateau de Versailles and its gardens, making the city one of the first areas listed among the UNESCO World Heritage site. Its

population in 2019 was 84808 inhabitants. Versailles is working closely with its residents to finalise ideas for nature-based solutions interventions to preserve the quality of life offered by its natural environments.

8.2. GoGreenRoutes Interventions

The intervention planned in Versailles is an urban wellbeing lab that will respond to a number of environmental and social challenges in the area such as sedentary lifestyle, air and noise pollution or social isolation. Our local target is Square Blaise Pascal, where we aim to encourage the numerous benefits for the health of nature-based solutions for cities, including air quality, biodiversity protection and thermal comfort. Furthermore, the intervention aims to be a meeting point that will host social activities, enable more active lifestyles and encourage exchanges among different generations.

Among the goals of the GoGreenRoutes intervention, we aim to develop outdoor activities, promote sustainable modes of transport and renew the use of the existing space. Moreover, we contribute to breaking open silos in the public administration of Versailles by bringing together six administrative departments: Sports, Green Space, Urban Planning and Transport, Neighbourhood Life, Leisure ad Youth and Communal Centre for Social Actions.

The goal of the seedbed intervention in this city was to raise awareness about nature and discuss ideas for the future square.

The participants suggested promoting local products more in the space as well as creating an 'edible park'.

Among the ideas shared on the future intervention in the Blaise Pascal Square, participants suggested sports amenities and small stadiums, a water basin and more trees and flowers.

The participants and locals requested more green and blue spaces with water sections and relaxing spots for them to enjoy. It was important to notice the space and to reframe the green areas into more colourful and diverse ones.

The NBS intervention in this city will be a redevelopment of a natural park along with including intergenerational games. From the results of the seedbed intervention and other actions carried out during 2022, the city decided to add more trees to create a large meadow in the area, to ensure there are spaces to practice sports such as basketball, to develop multi-purpose play areas, to ensure there are spaces to stop and stay at Blaise Pascal Square.

8.3. Proposed Digital Placemaking for Nature & Wellbeing

Responding to the city of Versailles as an urban wellbeing lab, we propose to create a digital wellbeing lab platform, as a forum to promote nature-based solutions in the Square Blaise Pascal. This digital lab will share stories, where

the community can find news and updates, organise social gatherings and sports gatherings as well as topromote local businesses events. Furthermore, to ensure the intervention is accessible and shares the different benefits of urban nature spaces, we suggest creating a digital guide for relaxation and to taking notice of the place.To design these initiatives, we propose following our model.

The first stage of this model will be informed by the several initiatives and consultation interventions undertaken by GoGreenRoutes. We suggest having a specific participatory event where the model is presented to the community and the goals are co-created with them to inform the different ideas that have already been shared.

> **For example,** to create the digital wellbeing lab and choose the purposes of the digital platform, the community have to be involved in the process and take ownership of the initiative. Discussions regarding the community and place needs, accessibility and inclusion approaches of the initiative, success measurements, or branding options have to be held.

The participatory place branding and digital placemaking development is the second stage. In this case, we propose the initiative to be led by the community. The GoGreenRoutes team members and city members are also part of the group as facilitators and experts in interdisciplinary fields, where community members are also accounted as experts of the place and the community. GoGreenRoutes and city members will ensure groups are also informed about other groups' development and opportunities for collaboration are created.

> **For example,** how is technology used to enhance the solution they have chosen? Who oversees this in the long term? What is the value of the digital wellbeing lab? Etc.

Finally, the third stage refers to supporting the implementation of the initiatives and also assessing their effects. Each group chooses the assessment tools and measures that will be optimum for their initiative. This process is iterative, and so after understanding the effects and potential improvements these are discussed with the working group and implemented.

> **NBS Launch event**

Before launching the GoGreenRoutes intervention, we advise to have planned a marketing strategy to communicate the event, have a digital presence in the city and share ideas, news and comments with the community. To do so, we suggest following our toolkit, specifically the marketing and digital placemaking for nature and wellbeing sections. Some thoughts on this will be:

Online presence of the GoGreenRoutes targeted place: make sure there is a profile created in the main social media channels used by the community. For example, a Facebook group and a Twitter and Instagram profile.

Make a plan for the online presence and the launch of the GoGreenRoutes intervention: when is the intervention being launched? Make sure you inform about this using social media and digital channels. Inform prior to, during and after the intervention. Make sure there is a profile image and background, to have updated information of the location, the time and who to contact for any query or comment.

Check the channels and the inbox: make sure you are up to date on the comments and emails from the citizens. The online presence is an ongoing task, not something to set up and forget. It is a valuable channel of communication, so take care of it.

Is there any digital placemaking action that can happen on the day? Maybe you can have tasters of the different ideas gathered with the community on digital placemaking for nature and wellbeing. How about showing the users and citizens how to use the digital wellbeing lab or the digital guide?

Digital Wellbeing Lab

The goal of the platform is to be a digital hub of the intervention at the Square Blaise Pascal. The lab should allow the community to use it as a forum, hosting stories and news, allowing comments and discussions as well as the community organisation of social gatherings and sports gatherings. There is an opportunity to also showcase local businesses as this was one of the requirements raised from the seedbed intervention.

The lab should be an active and ever-changing platform that evolves with the space and its use.

Digital guide

During the seedbed intervention, the community raised their desire to have a place for relaxation. Therefore, along with the digital wellbeing lab platform, we suggest creating a digital guide for relaxation. This guide will be prompted in the real space with different stops and will invite the consumers to take notice of the space, engaging with different senses to have mindful moments in the physical space. The digital guide can also be hosted in the digital wellbeing lab platform but should be easily accessible through mobile phones. We suggest having some digital resources to help the community learn about ways of relaxing and taking notice of the place, as mindful exercises to try in this area. Include citizen science apps in the walk, to ensure the users learn and interact digitally with the place and with other. See section 3.4.2. For example, a specific audio guide for the space can be created using the Geotourist app.

Tip: Ensure the guide is inclusive and accessible for those with diverse abilities. See Inclusion resources in section 3.1.3.

9. Seed Cities Toolkits

The seed cities of the project are given a supportive arena for them to re-think, plan and implement their own urban greening measures in the future. The seed cities are Region of Murcia (Spain), Munich (Germany) and Gzira (Malta).

We suggest following the work of the cultivating cities – specially enhancing their online presence to find inspiration and ideas on how to implement digital placemaking in their locations.

Developing and Implementing Digital Placemaking Initiatives for Seed Cities

As the three seed cities have similarities in their nature, the suggested work is overarching and can be applied to all three.

Phase 1 Discovery

This phase will understand the strengths, weaknesses, opportunities, and threats for producing a digital placemaking initiative. Analysis would aim to unveil the dimensions of citizen affinity with nature. It will also determine the specific group(s) to target with a digital placemaking initiative. Developing specific citizen personae will help to illustrate the target audience's needs, preferences, and behaviour. Of particular note, the NBE canvasing tool (WP4.3) has been used to good effect in determining citizens engagement with nature either in natural or urban nature environments. Personae of target groups can help to build a solid foundation for the initiative (e.g., young professional, digital savvy, time-poor, physically active)

Reviewing each Seed City market trends is also pivotal as well as attempting to understand the expected technological direction of the marketplace. This research provides insights into the target audience technological usage characteristics. Findings would enhance the Seed Cities understanding of citizens usage of nature discovery, or nature-related mobile apps, as well as appetite for digital placemaking initiatives.

Analysis of competitors will also identify their strategies, strengths, and weaknesses. This analysis helps you differentiate and develop competitive advantages of the digital placemaking initiative. It is suggested that taking part in the MOOC run by RWTH would be of particular value to determining rich insights. Analysis may also reveal existing similar initiatives either within the GoGreenRoutes project, or externally. In which case the initiative would need to be modified to differentiate itself from competitors. In some cases, learnings from other digital placemaking initiatives outlined above might inform this analysis.

Phase 2 Planning

This discovery should lead to the production of a clear and tangible mission statement. The mission statement will establish the parallels with the vision of the Seed City and the digital placemaking initiative. It will also define the purpose and direction of creating such an initiative. From this missions statement, clear and measurable goals for the initiative should be created, aligned with a set of objectives that are specific, achievable, relevant, and time-bound (SMART). Objectives could focus on the task of raising awareness of engagement with nature, downloading the digital placemaking asset, and establishing ongoing sustained interaction with the initiative.

Phase 3 Implementation

To develop a marketing strategy to promote the digital placemaking initiative, Seed Cities will be required to establish strategies and tactics to achieve the goals previously set out. This includes determining the marketing mix (product/service, price, promotion, and place) and selecting the appropriate marketing channels and platforms. In defining the strategy for the initiative, a focus on the produce/service and place would be highly recommended. Furthermore, an analyses is required of appropriate, local and regional media channels to use to with supporting promotional activities.

Financial resources will be required to support marketing efforts. This budget should align with your goals and support the implementation of your marketing strategies. It should also be noted to factor in costs and ongoing maintenance of the initiative. Outsourced work from developers and creative agencies might also be considered. After media channels have been identified, it is necessary to specify the content, campaigns, and initiatives you will implement to engage your target audience and promote the initiative. This includes creating a content plan, identifying key messages, and selecting appropriate marketing tactics. Seed Cities may benefit from aligning digital placemaking initiatives with the ongoing work within the GoGreenRoutes project. However Seed City specific content on relevant social media channels will be a useful asset.

It is also important to define the roles and responsibilities of individuals or teams involved in executing the marketing campaign around the digital placemaking initiative. This ensures accountability and coordination throughout the implementation process. Typically, a marketing plan requires a marketing manager who is accountable and responsible for the development, promotion, implementation and evaluation of the initiative.

Phase 4 Evaluation

During implementation of the digital placemaking initiative, it is essential to regularly monitor the performance of the initiative through well defined KPIs linked to the goals and objectives previously identified. KPIs should consider user

interaction and engagement, but also further effects such as wellbeing and other physical effects of the initiative. It is suggested that Seed Cities analyse broader results of the campaign, gather feedback from users, and make necessary adjustments to optimize your marketing strategies and improve outcomes. Through honest and clear reflections will produce better decisions for the improvement and optimisation of the digital placemaking initiative.

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1. Annex 1: Placemaking Organisations

Placemaking Europe https://placemaking-europe.eu/

PlacemakingX https://www.placemakingx.org/

Art Place America https://www.artplaceamerica.org/

Project for Public Spaces https://www.pps.org/

Placemakingdesign http://www.placemakingdesign.com/

Placemaking India https://placemakingindia.org/

Placemaking Action Week https://placemakingactionweek.com/

Digital Placemaking Institute http://digital-placemaking.org/

Bristol Bath Creative https://www.bristolbathcreative.org/the-team

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