Economical			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Costs	This refers to the total expenses of a technology or service over its entire lifecycle. Costs encompassed in this are costs incurred during the design, development, production, distribution, maintenance, etc.	Total Cost of Ownership (TCO)	Total Cost of Ownership refers to the comprehensive financial evaluation of a technology or service throughout its entire lifecycle. It encompasses all costs incurred during the design, development, production, distribution, maintenance, and operation of the technology. This includes initial capital costs, hidden costs, maintenance costs, and operational costs over the lifespan of the product or service. TCO allows for a holistic assessment of the financial expenditure associated with the technology, taking into account both visible and hidden costs, enabling better evaluation of economic feasibility and efficiency.
Embedded costs	Refers to the total costs associated with the technology, including initial capital costs, maintenance costs, and operational costs over its lifespan. These costs are typically hidden and difficult to measure but they can have a significant impact on the overall costs of the product or service.		
Costs / m2	Cost per square meter is the financial expenditure associated with UHI mitigation technologies measured on a per-unit area basis. It includes material, labor, installation, operation, maintenance, and energy costs, enabling evaluation of economic feasibility and efficiency.		
Ownership costs	The costs associated with owning and maintaining a technology over its lifespan.		
Costs of implementation	Refers to the costs associated with installing the technology, including labor, equipment, and site preparation.	Implementation and installation costs	Refers to the total expenses associated with implementing and installing a particular technology solution, including costs such as hardware and software purchase, licensing fees, installation fees, labor, equipment, site preparation, training expenses, and other related costs.
Installation costs	The expenses associated with the setup and configuration of a technology or system, including hardware, software, and labor costs.		
Surcharge costs for installation	Additional fees or charges that may be added to the installation costs of a technology or system, such as taxes or shipping fees.		
Management costs	The ongoing expenses related to the supervision and maintenance of a technology or system, such as staff salaries, training, and software licensing fees.	Maintenance and Management Costs	Maintenance and Management Costs refer to the ongoing expenses associated with the supervision, upkeep, and repair of a technology or system throughout its operational lifespan. These costs include items such as staff salaries, training, software licensing fees, and other resources required for the regular maintenance and servicing of the technology. Maintenance costs are calculated on a per-unit area basis, taking into account the specific area covered by the technology or system. It encompasses the financial expenditure necessary to ensure the proper functioning, reliability, and longevity of the technology, and is essential for sustaining its performance and efficiency over time.
Maintenance costs per m2	The ongoing expenses related to the upkeep and repair of a technology or system, calculated on a per unit area basis.		
Product variation and Cost impact analysis	Product variation and cost impact analysis involves evaluating how variations in product options or configurations synergize with other technologies and impact overall costs in UHI mitigation. This analysis assesses how different product variations, such as alternative materials or design features, interact with complementary technologies and their combined effect on costs. It considers factors such as material compatibility, installation requirements, operational efficiency, maintenance needs, and potential cost savings to provide insights into the optimal product configuration that maximizes synergy while minimizing costs in UHI mitigation strategies.	Cost Analysis and Optimization	Cost Impact Analysis and Optimization is a comprehensive process that evaluates the synergistic effects of product variation, color/grain choices, and cost determinants on the overall expenses of UHI mitigation technologies. It assesses how different product variations, including alternative materials and design features, interact with complementary technologies and their combined effect on costs. This analysis considers factors such as material compatibility, installation requirements, operational efficiency, maintenance needs, and potential cost savings to identify the optimal product configuration that maximizes synergy while minimizing costs in UHI mitigation strategies. It also examines the impact of color/grain choices on costs, understanding how aesthetic features can affect expenses. Additionally, it identifies cost determinants that influence overall expenses, such as material selection, technology specifications, installation requirements, labor, maintenance, and local regulations. By conducting a cost impact analysis and optimization, stakeholders can make informed decisions to manage costs effectively and identify cost-saving measures in UHI mitigation.
Color/Grain Impact on Costs	The impact of color/grain refers to how aesthetic features affect costs in UHI mitigation technologies. Certain color/grain choices may be costlier due to material availability, production processes, or design preferences.		

Cost Determinants	Cost determinants are factors influencing overall expenses in UHI mitigation, including material selection, technology specifications, installation requirements, labor, maintenance, and local regulations. Understanding these factors helps manage costs effectively.		
Transportation Cost Analysis	Transportation cost analysis evaluates the financial expenses associated with transporting materials or equipment for UHI mitigation projects. It considers factors such as distance, transportation mode, fuel costs, labor expenses, and logistics to estimate the impact on the overall project budget and optimize cost-efficiency.	Transportation Analysis	Transportation Analysis encompasses the evaluation of both the financial expenses and logistical convenience related to the transportation of materials, equipment, or the technology itself for UHI mitigation projects. It involves assessing factors such as distance, transportation mode, fuel costs, labor expenses, and logistics to determine the financial impact and feasibility of transportation.
Transportation ease	Transportation ease refers to the level of convenience, efficiency, and feasibility associated with transporting a specific technology from its manufacturing or storage location to the intended destination.		
Long-Term Savings Analysis	Long-term savings analysis assesses the financial benefits realized over an extended period when implementing a UHI mitigation measure, including reduced energy consumption, lower maintenance costs, and potential operational efficiencies. It helps stakeholders evaluate the long-term financial advantages of investing in UHI mitigation technologies.	Financial Sustainability Analysis	Financial Sustainability Analysis is an assessment that evaluates the long-term financial benefits, costs, and cost recovery potential of UHI mitigation technologies. It examines the long-term savings, embedded costs vs. returns, and the process of offsetting expenses to achieve a positive return on investment. This analysis helps stakeholders determine the financial viability and sustainability of UHI mitigation measures.
Cost-Saving Measure Assessment	Cost-saving measure assessment determines whether a UHI mitigation measure provides ongoing cost savings or is primarily an upfront investment. It considers factors such as energy savings, reduced maintenance costs, and operational efficiencies to determine the measure's potential as a cost-saving solution.		
Embedded costs VS returns	Refers to the balance between the total costs associated with the technology and the benefits it provides, such as energy savings, increased efficiency, or improved environmental performance.		
Cost recovery	The process of generating revenue or reducing expenses to offset the initial investment and ongoing costs of a technology or system, in order to achieve a positive return on investment.		
Product price	The amount that a consumer or organization must pay to acquire or use a particular technology product or solution.	Product price	The amount that a consumer or organization must pay to acquire or use a particular technology product or solution.

Market			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Product alternatives	Other products or services that may offer similar or different features and benefits as the technology or system being considered.	Comparative Assessment of Technology Alternatives	Comparative Assessment of Technology Alternatives involves evaluating and comparing different products, services, or technologies that offer similar or different features and benefits to the technology or system being considered. This assessment examines the comparative advantage, effectiveness, and innovation of the technology in relation to other available alternatives, including both artificial products and natural elements with similar functionality. It considers factors such as performance, cost, feasibility, sustainability, carbon dioxide reduction, and innovation to determine the optimal choice for achieving desired outcomes. The goal is to identify the most suitable technology option based on a comprehensive analysis of its advantages and disadvantages compared to alternative solutions in both human-made and natural contexts.
Comparative advantage over other alternatives	The ability of a new technology to outperform or offer superior features compared to other available alternatives.		
Comparison with water-permeable tiles	A comparison of the performance and characteristics of the technology with those of water-permeable tiles, which are commonly used in parking lots.		
Effectiveness compared to alternatives	The potential positive or negative impact of a technology initiative compared to other options, such as the cost, feasibility, and sustainability of using a particular technology.		
Technology parity	The degree of similarity or equivalence between the existing or current technology system and the new technology system being considered for implementation. It is a measure of how well the new technology can perform the same functions or tasks as the current technology, with similar or improved levels of quality, reliability, and efficiency. The aim of achieving technology parity is to ensure that the new system does not have any significant drawbacks or disadvantages compared to the current system, while offering additional benefits or advantages that justify the cost and effort of implementation.		
Carbon dioxide reduction (comparison to other technologies)	Carbon emission reduction comparison refers to the process or effect of decreasing or mitigating the release of carbon dioxide (CO_2) into the atmosphere compared to other technologies or natural elements. It involves measures and actions aimed at minimizing or offsetting the carbon footprint associated with human activities.		
Innovation of the System	Innovation of the System refers to the level of novelty and advancement that the technology brings compared to existing design practices.		
Required parties for technology promotion	The groups or individuals needed to effectively promote a technology initiative, such as stakeholders, government agencies, and industry partners.	Required parties for technology promotion	Required parties for technology promotion refers to the groups or individuals needed to effectively promote a technology initiative, such as stakeholders, government agencies, and industry partners.
Risk of proactive approach	The potential negative consequences associated with taking an active role in implementing a technology initiative	Risk of proactive approach	Risk of proactive approach refers to the potential negative consequences associated with taking an active role in implementing a technology initiative
Supply Chain readiness	Supply Chain readiness refers to degree readiness of the network of organizations, resources, and activities involved in the production, distribution, and delivery of a product or technology.	Supply Chain and Market Readiness	Supply Chain and Market Readiness refers to the preparedness and capability of the network of organizations, resources, and activities involved in the production, distribution, and delivery of a product or technology, as well as the overall market ecosystem in which it operates. It encompasses factors such as infrastructure, logistics, supplier relationships, inventory management, coordination, market dynamics, customer behavior, and competitive landscape. Supply Chain and Market Readiness evaluates the readiness of both the supply chain and market environment to effectively support the successful implementation and adoption of a technology or product.
Technology delivery time	Technology delivery time refers to the period it takes for a specific technology to be delivered and made available for use or installation after the ordering or procurement process.		
Supply Chain Reorganization	The potential reorganization or restructuring of supply chain processes as a result of implementing the technology.		
Maximum Orderable Quantities	Maximum orderable quantities refer to the predetermined limits or thresholds set by suppliers or manufacturers on the maximum amount of a technology that can be ordered or purchased at a given time.		
Market ecosystem	The network of companies and organizations that interact with each other within a particular market, including competitors, customers, suppliers, and partners.		

Technological Requirements			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Maintenance	The level of maintenance and care required to ensure the optimal functioning and lifespan of the technology.	Maintenance management	Maintenance management refers to the systematic and strategic approach of overseeing and maintaining the optimal functioning and lifespan of a technology or system. It encompasses various aspects, including the level of maintenance and care required, the engagement of maintenance providers who offer services for upkeep and repair, the labor intensity involved in performing maintenance activities, and the knowledge requirements for effective maintenance. Maintenance management also involves determining the placement of maintenance, whether it requires dedicated paths or integration within the surrounding landscape, to ensure accessibility for routine maintenance, inspections, and repairs. It further includes defining the specific maintenance requirements, tasks, and resources needed, as well as establishing maintenance schemes and patterns for structured and proactive maintenance. By implementing maintenance management practices, stakeholders can effectively preserve the performance, reliability, and longevity of the technology or system.
Maintenance provider	A maintenance provider is an entity or organization that offers services related to the upkeep, repair, and servicing of technologies, systems, or equipment		
Maintenance Labor Intensity	Maintenance labor intensity refers to the level of effort and manpower required to perform maintenance activities on a technology or system. It measures the extent to which maintenance tasks demand human resources, skills, and time.		
Maintenance Knowledge Requirement	Maintenance knowledge requirement refers to the level of expertise and understanding necessary to effectively perform maintenance tasks on a technology or system. It encompasses the specific knowledge, skills, and competencies needed to identify, diagnose, troubleshoot, and address maintenance issues or challenges.		
Maintenance accessibility	Maintenance placement refers to the consideration of whether a technology or system requires a dedicated maintenance path or area or can be seamlessly integrated within the surrounding landscape. It involves assessing the accessibility needs for routine maintenance, inspections, and repairs		
Maintenance Adaptation	The process of adjusting or modifying maintenance practices to accommodate the requirements of the technology. This may involve reconfiguring techniques, irrigation schedules, or other care routines to ensure the optimal health and development of the trees within the technology.		
Technology element replacement and maintenance	Filter layer replacement refers to the periodic changing of the filtering layer within a system or technology used for maintenance purposes. It involves replacing the existing filter layer with a new one to ensure optimal performance and functionality		
Maintenance requirements and Scheme	Maintenance requirements are the specific tasks, activities, and resources necessary to maintain the performance and reliability of a technology. This includes regular inspections, cleaning, repairs, and component replacements. The maintenance scheme provides a structured plan, specifying the frequency of maintenance activities and the technology or tools necessary for effective maintenance. It outlines the recommended maintenance intervals and preventive measures to ensure optimal functionality and longevity of the technology. By following the maintenance requirements and scheme, stakeholders can proactively address maintenance needs, minimize downtime, and maximize the technology's lifespan..		
Maintenance patterns	Maintenance patterns are recurring schedules or routines followed for performing regular maintenance on a technology or system. These patterns outline the frequency and tasks involved in preserving the functionality, reliability, and performance of the technology. They may include preventive maintenance, scheduled inspections, cleaning, and component replacements. By adhering to maintenance patterns, stakeholders can ensure consistent upkeep, minimize unexpected failures, and optimize the technology's lifespan and performance.		
Cooling Water requirements	Cooling water requirement refers to the quantity of water necessary for effective cooling in a given system or process. It represents the amount of water needed to absorb and dissipate heat, maintaining the desired temperature levels.	Water Resource Management	Water Resource Management involves the careful assessment and management of water requirements for various purposes, including cooling, irrigation, and sustaining the optimal functioning and growth of technologies, systems, and living organisms. It encompasses understanding and monitoring the cooling water requirements to ensure effective heat dissipation and temperature control, implementing irrigation practices to meet the specific water needs of plants, crops, or landscapes, and addressing the overall water requirements to sustain the desired outcomes of the technology or system. Water Resource Management aims to
Irrigation requirements	Irrigation requirements refer to the specific water needs and management practices necessary for providing adequate hydration to plants, crops, or landscapes		
Water requirements	Water requirements refer to the amount of water needed to sustain and support the optimal functioning and growth of a technology, system, or living organisms such as plants.		
Water usage	the amount of water that is consumed or utilized by a technology, such as for irrigation, cooling, or manufacturing processes.		

Minimum Water Collection Size (requirement)	Minimum Water Collection Size refers to the minimum size or capacity required for a water collection system or technology to effectively collect and store a sufficient amount of water. It represents the threshold at which the system can reliably capture and retain an adequate volume of water to meet specific needs or objectives, such as irrigation or water reuse.		optimize water usage, minimize waste, and ensure the efficient and sustainable use of water resources in diverse applications.
Pruning requirement	Additional pruning requirement refers to the extent or frequency of pruning or trimming that is necessary beyond regular or routine maintenance for the proper care and management of plants or vegetation associated with a technology or system.	Pruning requirement	Additional pruning requirement refers to the extent or frequency of pruning or trimming that is necessary beyond regular or routine maintenance for the proper care and management of plants or vegetation associated with a technology or system.
Underlying Surface Requirements	Underlying surface requirements pertain to the specific conditions and characteristics necessary for the surface on which a technology or system is installed. These requirements consider factors such as stability, load-bearing capacity, flatness, and compatibility with the technology or system.	Ground integration criteria	Ground integration criteria encompass the specific requirements and considerations for successfully installing and integrating a technology or system into the ground. These criteria take into account factors such as the underlying surface requirements, soil layer requirements, and installation depth considerations. The underlying surface requirements ensure that the surface on which the technology or system is installed meets stability, load-bearing capacity, flatness, and compatibility standards. The soil layer requirement determines the recommended depth or thickness of soil necessary for optimal functionality and desired outcomes, considering factors like vegetation type and system requirements. Installation depth consideration involves assessing and determining the appropriate depth to avoid interference or damage to underground infrastructure. By adhering to ground integration criteria, stakeholders can ensure a successful and compatible installation of the technology or system into the ground.
Soil Layer Requirement	Soil layer requirement refers to the recommended depth or thickness of soil necessary for the proper functionality and desired outcomes of a specific application or system. The required soil layer depth depends on various factors, such as the type of plants or vegetation to be grown, the intended purpose of the soil (e.g., for landscaping, gardening, or agriculture), and the specific requirements of the system or application.		
Ground implementation Requirements	Ground implementation requirements encompass the specific conditions and factors necessary for successfully installing and integrating a technology or system into the ground. These requirements may include considerations such as the depth of installation, soil composition and stability, excavation and compaction techniques, and any necessary underground infrastructure or utilities		
Soil layer requirement	Refers to the specific soil conditions needed for the technology to function properly, such as soil composition, drainage, and water-holding capacity.		
Soil (requirement)	Refers to the medium in which plants grow and the ecosystem that supports plant growth. Soil is essential for food production and is affected by technology-related activities such as land use changes, chemical inputs, and irrigation.		
Installation depth Requirement	Installation depth consideration refers to the careful assessment and determination of the appropriate depth at which a technology or system should be installed in the ground to prevent potential interference or damage to underground cables, pipes, or other infrastructure.		
Root Space Requirements	Root space requirements refer to the amount of space needed for the root system of a tree or plant to grow and develop properly.	Space requirement	Space requirement refers to the amount of physical space or area needed to accommodate a system, structure, or technology. This requirement expresses horizontally and vertically and too holds for supporting systems of a technology such as construction systems and root systems.
The amount of technology needed to get effect	Refers to the level or quantity of technology required to achieve a desired outcome or effect.	Technology Dosage	Technology dosage refers to the quantity or amount of a specific technology or system required to achieve a desired effect or outcome. It involves determining the optimal dosage or application rate of the technology based on factors such as the scale of the project, environmental conditions, and desired results. The technology dosage may vary depending on the specific application and the intended purpose of the technology. By carefully assessing and determining the appropriate technology dosage, stakeholders can ensure the effective implementation and desired impact of the technology.
Thermal Impact Threshold	Thermal Impact Threshold refers to the minimum number of structures or installations required to collectively create a noticeable impact on the surrounding temperature.		
Required slope and drainage systems	The necessary slope and drainage systems required for optimal performance of the technology, which can vary depending on the specific characteristics of the technology.	Slope and Drainage Requirements:	Slope and drainage requirements refer to the necessary slope and drainage systems needed to ensure the optimal performance and functionality of a technology. This includes considerations for the gradient or angle of the surface on which the technology is installed, as well as the implementation of appropriate drainage systems to manage water runoff or accumulation. The specific slope and drainage requirements may vary depending on the characteristics and specifications of the technology, and it is essential to design and implement these systems accordingly to facilitate proper operation and prevent potential issues such as water stagnation or damage.

Functional			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Effectiveness	Refers to the degree to which a technology product or service meets its intended goals and objectives. In this context this refers to the contribution to heat mitigation.	Heat Mitigation Effectiveness	Heat mitigation effectiveness refers to the overall capability of a technology product or service to achieve its intended goals and objectives related to reducing heat. It encompasses the technology's ability, scale and magnitude to effectively contribute to heat mitigation efforts. This term encompasses all terms significant to the UHI effect such as temperature reduction, urban cooling effects, air temperature, surface temperature, outdoor thermal comfort index, nocturnal air temperature, heat stress reduction, and its effect on the outdoor thermal comfort index.
Effect on Heat stress	The ability of a technology to reduce the impact of heat stress on human health and the environment.		
Heat reduction per square meter	The degree to which the technology can reduce the temperature of the surrounding area per unit of surface area.		
Thermal Impact	Thermal Impact refers to the effect of a technology on the temperature of its surrounding environment. It encompasses physiological processes such as transpiration and shade-providing that influence the local microclimate and contribute to temperature regulation.		
Heat Reducing Capacity	Heat Reducing Capacity refers to the ability of a technology or system to effectively reduce or mitigate heat.		
Effect on other parameters involved in perception of heat	This refers to how the technology affects other factors that contribute to the overall perception of heat in an area, such as humidity, wind speed, and solar radiation.	Comprehensive Heat Mitigation Effectiveness	Comprehensive heat mitigation effectiveness refers to the overall impact and success of a technology in reducing heat and improving the perception of heat in an area. It considers not only the direct reduction of temperature but also the effect on other parameters that influence the perception of heat, such as humidity, wind speed, and solar radiation. This holistic approach ensures that the technology addresses multiple factors contributing to the overall experience of heat, creating a more comfortable and pleasant environment.
Shading effect	In this context this refers to the effect of the technology to generate shadow in its environment, and with that mitigate that area to be directly illuminated by incoming solar radiation.	Shading effect	Shading effect refers to its ability to create shadows in the surrounding environment. This shading helps to mitigate direct exposure to incoming solar radiation in the shaded area. By reducing direct illumination, the technology contributes to the overall reduction of heat caused by solar radiation in that particular area.
Albedo effect technology	The reflective property of the technology, which affects the amount of solar radiation reflected back into the atmosphere.	Albedo effect	Albedo effect refers to a technology's reflective property, influencing the amount of solar radiation that is reflected back into the atmosphere. By reflecting solar radiation, the technology helps to reduce the amount of heat absorbed by the surrounding environment, contributing to the mitigation of heat buildup.
Color-Surface Temperature Relationship	Color-Surface Temperature Relationship refers to the impact of different colors on the temperature of a surface. It explores how the choice of color for a surface, such as a building facade or pavement, can influence its temperature.	Color-Surface Temperature Relationship	Color-Surface Temperature Relationship refers to the impact of different colors on the temperature of a surface. It explores how the choice of color for a surface, such as a building facade or pavement, can influence its temperature.
Time scale	The time scale of an effect refers to the period over which the effect is expected to occur, or the duration of its impact. It is a measure of how long the effect will last, and can be used to understand the temporal dimension of a particular phenomenon or process.	Temporal effectiveness	Temporal effectiveness refers to the duration or specific timeframe during which a technology or system exhibits its optimal benefits and desired outcomes. It encompasses both the time scale of the effect, which

Optimal benefit period	The optimal benefit period refers to the specific timeframe or conditions during which a technology or system provides the maximum advantages, benefits, or desired outcomes.		measures the duration of the impact, and the optimal benefit period, which identifies the specific conditions or timeframe when the technology or system provides maximum advantages. By considering temporal effectiveness, stakeholders can better understand and plan for the duration and timing of the benefits associated with implementing the technology or system.
Performance in freezing temperatures	The performance of the technology in freezing temperatures.	Cold weather performance	Cold weather performance refers to the ability of a technology to maintain its functionality, effectiveness, and safety in freezing temperatures. It encompasses the technology's performance in icy or wet conditions, including its resistance to slipperiness and the potential need for deicing agents like salt. Evaluating the cold weather performance of a technology helps assess its reliability and suitability for use in freezing environments, ensuring it can continue to function optimally and safely even in cold weather conditions.
Slipperiness and need for salt	The degree of slipperiness of the technology when wet or icy, and the potential need for deicing agents such as salt.		
System Operation	System Operation refers to the functioning and processes of a technology or system. It describes the specific way in which the system operates to achieve its intended objectives. The system's operation encompasses the various components, mechanisms, and interactions involved in its functioning. It includes inputs, processes, and outputs that contribute to the overall performance of the system	System Operation	System Operation refers to the functioning and processes of a technology or system. It describes the specific way in which the system operates to achieve its intended objectives. The system's operation encompasses the various components, mechanisms, and interactions involved in its functioning. It includes inputs, processes, and outputs that contribute to the overall performance of the system
Water Reuse from Crate Storage	Water Reuse from Crate Storage refers to the utilization of water stored within the crates underneath a structure for various purposes. It involves the process of extracting and repurposing the water collected in the crates, potentially for irrigation, landscaping, or other non-potable water needs. To facilitate water reuse, a pump or other relevant technology may be required to extract and distribute the stored water efficiently.	Water Reuse Capacity	Water Reuse Capacity refers to the maximum amount of water that can be effectively and efficiently reused from the system's storage. It represents the volume or quantity of water available for repurposing and depends on factors such as the size of the storage crates, the water storage capacity of the system, and the specific water needs for reuse purposes. The water reuse capacity indicates the potential for utilizing collected water sustainably and reducing reliance on freshwater sources for non-potable water applications.
Potential to reuse water from roofs for maintenance	The capacity of a system to collect and reuse rainwater for various purposes, such as irrigation or cleaning.		
Water Reuse Capacity	Water Reuse Capacity refers to the maximum amount of water that can be effectively and efficiently reused from the system's storage. It represents the volume or quantity of water available for repurposing and depends on factors such as the size of the storage crates, the water storage capacity of the system, and the specific water needs for reuse purposes. The water reuse capacity indicates the potential for utilizing collected water sustainably and reducing reliance on freshwater sources for non-potable water applications.		
Water capture rate	Water capture rate refers to the amount of water that can be collected or captured within a given time period, typically measured in liters per hour or a similar unit of volume. It represents the capacity of a system or technology to harvest or collect water from a specific source.	Water capture and storage capacity	Water capture rate refers to the amount of water that can be collected or captured within a given time period, typically measured in liters per hour or a similar unit of volume. It represents the capacity of a system or technology to harvest or collect water from a specific source.
Water storage capacity	Refers to the amount of water that can be stored or retained by a technology, such as a reservoir or a water tank.		
Water purification steps	Water purification refer to the sequential steps required to treat the captured water by a technology into save drinkable water.	Water purification steps	Water purification refer to the sequential steps required to treat the captured water by a technology into save drinkable water.
Evaporation Regulation	Evaporation regulation refers to the control and adjustment of the evaporation intensity or rate within a system to meet the specific water needs of trees or plants.	Evaporation Regulation	Evaporation regulation refers to the control and adjustment of the evaporation intensity or rate within a system to meet the specific water needs of trees or plants.

Design			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Context design	Context design refers to the practice of designing technology products or services that are appropriate for the intended users and environment, taking into account factors such as their needs, goals, and values, as well as the context in which the technology will be used.	Urban context compatibility	Urban context compatibility refers to the degree to which a technology or intervention aligns with the unique social, economic, cultural, and environmental characteristics of urban environments. This includes considerations such as the built environment, the density and diversity of the population, and the existing infrastructure and policies in place.
'different building types'	the different types of buildings and structures that may require different types of technology solutions, depending on their size, purpose, and complexity.		
How does if fit in larger scale urban planning & context	Refers to the compatibility of the technology with the broader urban environment, including the local infrastructure, zoning regulations, and community needs.		
How well does it fit with underground soil structure	he compatibility of a technology or system with the existing soil structure and its ability to function optimally without causing soil erosion or other negative effects.	Landscape Integration and Technology Placement (LITP)	Landscape Integration and Technology Placement (LITP) refers to the process of strategically incorporating technologies into the overall landscape design and function, taking into account site orientation, site suitability, and visual harmony. LITP involves placing the technology in an optimal position within the landscape, considering factors such as the sun's path, environmental conditions, and the desired objectives of the technology. By carefully integrating the technology into the landscape, LITP ensures that it seamlessly blends with the surroundings, enhancing both functionality and visual appeal. Successful LITP requires thoughtful site evaluation, design, and placement to maximize the benefits and effectiveness of the technology in its specific location.
Landscape Integration	Landscape Integration refers to the process of incorporating technologies into the overall landscape design and function. It involves seamlessly blending the technology with the surrounding environment, vegetation, and other landscape elements to create a harmonious and cohesive appearance. Whether used as a standalone element or as part of a larger system, landscape integration ensures that the technology is thoughtfully incorporated into the overall landscape, enhancing its functionality and visual appeal. Successful landscape integration requires careful planning and design to ensure that the technology seamlessly integrates with the natural or built environment.		
Site Orientation	Site Orientation refers to the deliberate placement or positioning of a technology, structure, or design element in relation to the sun's path and surrounding environmental factors. It involves choosing whether to place the technology on the shadow side or sunny side of a public space based on specific objectives		
Site suitability	Site suitability refers to the evaluation of the appropriateness and effectiveness of a technology or system in different locations or environments. It involves identifying the specific conditions and requirements that make a particular site suitable or unsuitable for the implementation and operation of the technology.		
Applicability on clay soil	The suitability of the technology for use on clay soil, which can pose unique challenges to the performance and durability of paving technologies.		
Technology placement	Technology placement refers to the strategic positioning of a technology within a given area or urban environment. It involves selecting suitable locations where the technology can be implemented to maximize their benefits and achieve desired outcomes.		
Load bearing capacity	Load-bearing capacity refers to the maximum weight or load that a technology can safely support without compromising its structural integrity or functionality.	Structural Characteristics	Structural Characteristics refers to the collective properties and attributes of a technology or system that relate to its load-bearing capacity, weight per square meter, density, built area ratio and area to volume ratio. It encompasses the structural aspects that determine the maximum weight or load that the technology can safely support without compromising its structural integrity or functionality. The weight per square meter measurement provides insights into the load or pressure exerted by the technology on the underlying surface, while the area to volume ratio signifies the relationship between the surface area and volume of the technology. By considering these structural characteristics, engineers and designers can assess and optimize the performance, stability, and efficiency of the technology, ensuring its suitability for specific applications and environments.
Weight per square meter (kg/m2)	The measure of the weight or mass of the technology per unit area. This metric provides an indication of the load or pressure exerted by the technology on the underlying surface.		
Area to volume ratio	The ratio between the surface area and volume of a technology.		
Aesthetics of design	Aesthetics of design refers to the deliberate consideration and application of shapes, colors, and forms in the visual appearance of a product, technology, or environment to create an appealing and visually harmonious experience.	Aesthetic Design Features	Aesthetic Design Features encompasses the deliberate consideration and application of shapes, colors, forms, customization, patterns, and color variation in the visual appearance of a product, technology, or

Colour variation	Colour variation refers to the range of colors available for the design of the technology. This refers to the different hues, shades, and tones that can be incorporated into the technology's appearance. The color range allows for customization and aesthetic integration of the technology into its environment, offering options for different preferences and design concepts.		environment. It focuses on creating an appealing and visually harmonious experience by incorporating various design elements. The color variation aspect refers to the range of colors available for the technology's design, allowing for customization and aesthetic integration into the environment. The customization and patterns feature enables the use of different colors and patterns to create unique visual effects and match specific aesthetic preferences or design concepts. By incorporating these aesthetic design features, the technology enhances its visual appeal, offering versatility, customization, and the ability to create visually distinctive installations.
Customization and Patterns	Customization and Patterns refers to the ability to use different colors and create patterns in the design of the technology. This feature allows for creative expression and unique visual effects. By incorporating different colors and patterns, the technology can be customized to match specific aesthetic preferences or design concepts. It offers versatility in appearance and the opportunity to create visually appealing and distinctive installations.		
Unpleasant appearance	The visual or aesthetic appeal of a technology or its impact on the physical environment		
Pre-installation adaptability	Pre-installation Adaptability refers to the degree of flexibility or adjustability in the design of a technology or system before its installation to accommodate varying conditions or requirements.	Flexible Installation Design	Flexible Installation Design refers to the intentional incorporation of pre-installation adaptability and adaptability to uneven surfaces as design features within a technology or system. It involves designing the technology in a way that allows for flexibility and adjustability during the installation process to accommodate varying conditions or requirements, as well as the ability to be installed on uneven surfaces. These design features ensure that the technology can be successfully installed and properly function even in challenging or non-ideal site conditions, enhancing its versatility and effectiveness in different environments.
Adaptability to Uneven Surfaces	Adaptability to Uneven Surfaces refers to the capability of a technology to be installed on surfaces that are not perfectly flat or even, such as areas with small slopes or undulations. The technology is designed to accommodate and adjust to the topography of the installation site, allowing for proper installation and functionality even on uneven surfaces.		
Post-installation adaptability	Post-installation Adaptability refers to the capacity of a technology or system to be modified, adjusted, or reconfigured after its installation to accommodate changing needs, conditions, or requirements.	Flexible Maintenance Design	Flexible Maintenance Design refers to the intentional incorporation of post-installation adaptability, accessibility to underground infrastructure, modular accessibility, and replaceability as design features within a technology or system. It involves designing the technology in a way that allows for easy modification, adjustment, reconfiguration, and component replacement after installation, in order to accommodate changing needs, conditions, or requirements. These design features ensure that the technology can be efficiently maintained, inspected, repaired, and upgraded, enhancing its longevity, functionality, and versatility in different contexts.
Tactical / removable	refers to technology products or components that are designed to be easily removed, added, or replaced in order to adapt to changing needs or circumstances.		
Accessibility to Underground Infrastructure	Accessibility to Underground Infrastructure refers to the ease of accessing and maintaining underground utilities and infrastructure systems, such as water pipes, electrical lines, telecommunications networks, and sewage systems. It encompasses the ability to physically reach and interact with these underground facilities for inspection, repair, maintenance, and installation purposes.		
Modular Accessibility	Modular Accessibility refers to the capability of a technology or system to easily remove specific components from the structure to facilitate maintenance, repairs, or modifications, such as laying cables or making infrastructure adjustments.		
Replaceability	Replaceability refers to the ease and feasibility of replacing components or elements within a technology.		
Seasonal adaptability	Seasonal Adaptability refers to the capacity of a technology or system to accommodate different functions or characteristics based on the changing seasons.	Seasonal adaptability	Seasonal Adaptability refers to the capacity of a technology or system to accommodate different functions or characteristics based on the changing seasons.
Height limitation	Height Limitation refers to the maximum vertical extent or elevation that a technology or structure can attain.	Height limitation	Height Limitation refers to the maximum vertical extent or elevation that a technology or structure can attain.
Time scale	Time scale refers to the period of time over which a technology is expected to operate or remain in use, as well as the time required to develop, implement, and replace the technology.	Temporal Resilience	Temporal Resilience refers to the ability of a technology or system to adapt, endure, and remain functional over time, taking into account its lifespan, longevity, survival, implementation timeline, and durability. It encompasses both the duration of the technology's operation and its capacity to withstand environmental factors, stresses, and potential sources of degradation or obsolescence. Temporal resilience acknowledges the importance of long-term planning, design, and maintenance to ensure the sustained functionality and relevance of the technology throughout its lifecycle. It emphasizes the need for robustness, adaptability, and the ability
Lifespan	The expected duration for which the technology can function optimally under normal conditions before requiring replacement or major repairs.		
Longevity	Longevity refers to the potential lifespan of the technology. It indicates how long the technology can survive and continue to provide its intended benefits, such as shade, cooling, carbon sequestration, and aesthetic value.		
Survival	the ability of a technology to persist and remain relevant and functional over time.		

Time scale implementation	The estimated length of time required for the successful implementation of a technology or system.		to withstand changing conditions or requirements, enabling the technology to fulfill its intended purpose effectively over an extended period.
Durability	Durability refers to the ability of a material or technology to withstand wear, damage, or degradation over time and maintain its intended functionality. It represents the longevity and resistance of the material to environmental factors, physical stress, and other potential sources of deterioration.		
Recyclability	The ability of the technology to be recycled or repurposed at the end of its useful life, which can reduce waste and environmental impact.	Circular Material Management	Circular Material Management refers to an integrated approach that encompasses recyclability, material reuse, material reusability, and product reusability to achieve sustainable and resource-efficient handling of materials throughout the lifecycle of a technology. It emphasizes the design, production, use, and end-of-life stages, aiming to minimize waste generation, promote resource conservation, and foster a circular economy. This approach ensures that materials are recycled, repurposed, or reused to their fullest extent, reducing environmental impact and contributing to a more sustainable and circular material management system.
Material Reuse and Recycling	Material Reuse and Recycling refers to the practice of repurposing or recycling the material that is removed before adding a new technology or system. It involves finding alternative uses for the removed material to minimize waste and maximize resource efficiency.		
Material Reusability	Material Reusability refers to the potential for the technology or its materials to be reused after their initial use or installation. Reusability is an important aspect of sustainable design and construction, as it reduces waste and promotes resource conservation. The percentage of possible reusability indicates the portion of the technology or its components that can be effectively reused without significant degradation or loss of functionality.		
Product reusability	Product reusability refers to the ability of a technology or product to be used again for its original purpose or repurposed for alternative applications after its initial use.		
Circularity	Circularity refers to the concept of designing and implementing systems that promote the continuous use and reuse of materials, minimizing waste and resource consumption. In the context of the technology, circularity involves incorporating reused materials such as bricks and tiles that have been transformed into gravel. This approach allows for the utilization of materials that would otherwise go to waste, reducing the demand for new resources and minimizing the environmental impact of the technology.		
Circular economy considerations	The potential for the technology to support principles of the circular economy, such as reuse, repair, and recycling, throughout its lifecycle.		
Disposal	the process of disposing of a technology product or service at the end of its useful life.		
Material Flexibility	Material flexibility refers to the ability of a technology or system to be constructed or made from a variety of materials, rather than being limited to a specific material such as plastic. This flexibility allows for alternative material choices that may better align with specific project requirements, sustainability goals, or desired aesthetic considerations	Material Design Flexibility	Material Design Flexibility refers to the comprehensive ability of a technology or system to allow for a wide range of materials, substrates, plant diversity, and tree compatibility. It encompasses the degree of material flexibility, which enables the use of diverse materials to meet specific project requirements, sustainability goals, or desired aesthetic considerations. It also encompasses the degree of support for a rich variety of vegetation, known as plant diversity, within the technology or system, fostering ecological balance and promoting biodiversity.
Plant Diversity	Plant Diversity refers to the range of vegetation that can be grown and supported within a specific technology or system.		
Technology versatility	Technology versatility refers to the ability of a specific technology or system to accommodate and adapt to different substrates, types of vegetation, and plant species, providing flexibility in its application and use.		
Tree compatibility	Tree Compatibility refers to the suitability and limitations of different tree species for placement within the technology or system.		

Material biodegradability	he biodegradability of a material refers to its ability to break down and decompose naturally through biological processes over an extended period. In the context of material sustainability, the biodegradability of a technology's components or materials is considered for their long-term environmental impact.	Material biodegradability	he biodegradability of a material refers to its ability to break down and decompose naturally through biological processes over an extended period. In the context of material sustainability, the biodegradability of a technology's components or materials is considered for their long-term environmental impact.
Sustainability production	Refers to the environmental impact of producing the technology, including the use of raw materials, energy, and water resources.	Sustainable Manufacturing	Sustainable Manufacturing refers to the adoption of environmentally conscious practices throughout the production process of a technology. It encompasses sustainable production processes, sustainable material usage, and the overall environmental impact of manufacturing. This approach focuses on minimizing resource consumption, reducing waste generation, and promoting social and economic responsibility. Sustainable manufacturing aims to achieve a balance between meeting production needs and ensuring long-term environmental sustainability by considering the use of raw materials, energy, water resources, durability of materials, recyclability, and waste reduction.
Degree of sustainable production process	The degree of sustainable production process refers to a manufacturing or production method that incorporates environmentally friendly practices, minimizes resource consumption, reduces waste generation, and strives for social and economic responsibility throughout the production lifecycle.		
Sustainability material usage	Refers to the environmental impact of using materials in the technology, including their durability, recyclability, and potential for waste reduction.		
Sustainability transportation	Refers to the environmental impact of transporting the technology to the site, including the use of fuel and emissions.	Sustainability transportation	Sustainability transportation refers to the environmental impact of transporting the technology to the site, including the use of fuel and emissions.
Natural Solutions	Natural Solutions refers to the use of organic and environmentally friendly approaches to address various challenges or achieve desired outcomes. In the context of the technology, natural solutions can be explored as alternatives or complementary measures to enhance its performance. This may include incorporating natural elements such as native plants, organic fertilizers, or bioengineered materials that align with sustainable practices and ecological principles.	Natural Solutions	Natural Solutions refers to the use of organic and environmentally friendly approaches to address various challenges or achieve desired outcomes. In the context of the technology, natural solutions can be explored as alternatives or complementary measures to enhance its performance. This may include incorporating natural elements such as native plants, organic fertilizers, or bioengineered materials that align with sustainable practices and ecological principles.
Vehicle Access Reinforcement	Vehicle access reinforcement involves implementing measures or modifications in specific areas of a path to facilitate the safe and smooth passage of vehicles, including emergency vehicles like ambulances. This may include structural enhancements or specialized materials to ensure the path can withstand vehicle weight and movement. By reinforcing vehicle access, the path becomes suitable for vehicular traffic, enabling efficient transportation and emergency response without compromising safety or functionality.	Vehicle Access Reinforcement	Vehicle access reinforcement involves implementing measures or modifications in specific areas of a path to facilitate the safe and smooth passage of vehicles, including emergency vehicles like ambulances. This may include structural enhancements or specialized materials to ensure the path can withstand vehicle weight and movement. By reinforcing vehicle access, the path becomes suitable for vehicular traffic, enabling efficient transportation and emergency response without compromising safety or functionality.
Growth potential in confined space	Growth potential in confined space refers to the ability of a tree or plant to continue growing when placed in a pot or confined space. It addresses the question of whether the tree's growth is limited to its current size within the pot or if it has the potential to grow further. The term acknowledges the potential constraints imposed by the limited space of the pot or container and explores whether the tree can continue to grow and develop or if its growth is restricted to its "final" size within the given space.	Growth potential in confined space	Growth potential in confined space refers to the ability of a tree or plant to continue growing when placed in a pot or confined space. It addresses the question of whether the tree's growth is limited to its current size within the pot or if it has the potential to grow further. The term acknowledges the potential constraints imposed by the limited space of the pot or container and explores whether the tree can continue to grow and develop or if its growth is restricted to its "final" size within the given space.
Walkability	Walkability refers to the ease and convenience of walking within a specific area or urban environment. When considering the implementation of technology, the choice of materials used can have a significant impact on walkability.	Pedestrian-Friendly Inclusive Design	Pedestrian-Friendly Inclusive Design refers to the intentional design of technology and urban environments that prioritize walkability and inclusivity. It involves creating accessible and inviting pathways, amenities, and features that accommodate individuals of all abilities, promoting safe and convenient pedestrian movement.
Inclusivity	Inclusivity refers to the design and consideration of accessibility for individuals with various disabilities or mobility challenges. It involves ensuring that the technology is accessible and usable by everyone, regardless of their physical abilities.		
Path Integration	Path integration refers to the ability to incorporate pathways or walking surfaces into the technology.		

Synergy			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Multifunctional	technology products or services that are capable of performing multiple functions or tasks, often in a compact or streamlined design.	Synergistic Technology Integration	Synergistic Technology Integration refers to the integration of technology products or services that can perform multiple functions or tasks, often in a compact or streamlined design. It emphasizes the potential for these technologies to work together with other systems, creating a synergistic effect that amplifies their overall benefits. This integration allows for the combined use of different technologies, leveraging their strengths and interactions to enhance performance, efficiency, and effectiveness. Synergistic technology analysis evaluates the combined advantages, including cost savings, improved durability, and investment incentives, that result from integrating a specific technology with other components or systems. This analysis helps stakeholders make informed decisions about adopting technologies that offer holistic and amplified benefits through their synergistic interactions. By harnessing the power of synergy, synergistic technology integration enables the development of innovative and efficient solutions that surpass the capabilities of individual technologies.
Synergy	The potential for a technology to work together with other technologies or systems to achieve greater overall benefits.		
Synergistic Technology Analysis	Synergistic technology analysis evaluates the combined benefits, including costs, durability, and investment incentives, that arise from the interaction and integration of a specific technology with other components or systems. It assesses potential cost savings, enhanced durability, and investment incentives such as grants or subsidies that result from the synergy created by integrating the technology with other elements. This analysis helps stakeholders make informed decisions about adopting technologies that offer holistic and amplified benefits through their synergistic interactions		
Can it function as water catchment area	The ability of a system or technology to collect and store water runoff for later use.	Water Integration Capacity	Water Integration Capacity refers to the ability of a system or technology to collect and store water runoff for later use, while also integrating with drainage solutions. It involves assessing compatibility with existing systems and evaluating the system's capacity to handle sewage relief. By considering the integration potential and sewage relief capacity, stakeholders can make informed decisions about implementing technologies that optimize water management and ensure efficient and sustainable water usage.
Integration with Drainage Solutions	Integration with drainage solutions refers to the capability of a technology to be combined with existing or additional drainage systems. It involves assessing whether the technology can be integrated harmoniously with other drainage solutions or if it functions as a standalone system. This analysis explores the compatibility, efficiency, and effectiveness of integrating the technology with different drainage solutions to manage water flow and mitigate potential drainage issues. Evaluating the integration potential helps stakeholders determine whether the technology can seamlessly work in conjunction with other drainage systems or if it operates independently to address drainage needs.		
Sewage relief capacity	Sewage Relief Capacity refers to the volume or flow rate of sewage or wastewater that a particular system or infrastructure can effectively handle or alleviate		
Combination with green infrastructure	The potential for the technology to be used in conjunction with green infrastructure, such as trees or vegetation, to enhance the environmental and aesthetic benefits of the paved area.	Green Infrastructure Integration	Green Infrastructure Integration refers to the potential for a technology to be used in conjunction with vegetation, such as trees or plants, to enhance the environmental and aesthetic benefits of a paved area. It involves assessing the compatibility of the technology with vegetation, considering factors like root development, sunlight exposure, and water and nutrient needs. By integrating the technology with strategically placed trees, this synergy promotes plant growth, creates a favorable microclimate, and enhances the overall ecological functionality and sustainability of the system.
Water buffer for irrigation	The potential of the technology to facilitate irrigation for		
Synergy – vegetation compatibility	Vegetation compatibility refers to the ability of a technology to coexist harmoniously with vegetation, considering factors such as root development, sunlight exposure, water and nutrient needs, and impacts on plant health. It ensures that the technology supports vegetation growth while preserving ecological balance and sustainability.		
Technology-Tree Synergy	Technology-tree synergy refers to the combined use of a specific technology with strategically placed trees that cast shade on it. This integration enhances success by keeping the technology moist for plants, promoting plant growth, and creating a favorable microclimate. This synergy improves the system's suitability for plant health, biodiversity, and overall ecological functionality.		
Recreational synergic potential	Recreational synergic potential refers to the ability of a technology to support or facilitate elements for recreational purposes.	Recreational Integration	Recreational Integration refers to the potential for a technology to support or facilitate elements for recreational purposes. It involves the intentional

Child-Friendly Design	Child-Friendly Design refers to the intentional consideration of the safety, accessibility, and enjoyment of children when designing a technology or structure.		consideration of safety, accessibility, and enjoyment, particularly for children, when designing a technology or structure. This child-friendly design approach ensures that the technology or structure provides a safe and enjoyable environment for children to engage in recreational activities, promoting their well-being and enhancing the overall user experience.
Ecological benefit	The ecological benefit of technology refers to the positive impact that technological innovations and advancements have on the environment and natural ecosystems such as temperature control, pollution reduction, and biodiversity support.	Ecological benefit	The ecological benefit of technology refers to the positive impact that technological innovations and advancements have on the environment and natural ecosystems such as temperature control, pollution reduction, and biodiversity support.

Social			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Social impact	Refers to the effects that technology has on society and its members, both positive and negative. Social impact can include factors such as changes in communication, economic activity, and the distribution of power and resources.	Societal Impact	Societal Impact refers to the effects that technology has on society and its members, encompassing both positive and negative outcomes. It includes changes in communication, economic activity, and the distribution of power and resources. The impact can be analyzed through various lenses, such as social benefit expression, which evaluates the extent to which a technology can contribute to positive social outcomes. Additionally, social value refers to the overall positive influence that a technology initiative can have on society, improving access to essential services like education and healthcare. Understanding and addressing the needs and concerns of different social user groups is crucial in ensuring that technology development and implementation align with the interests and well-being of diverse communities.
Social Benefit Expression	The extent to which the technology can benefit society or improve social outcomes.		
Social value	The positive impact that a technology initiative can have on society, such as improving access to education, healthcare, and other essential services.		
Social 'user groups'	Refer to groups of people who are affected by or have a stake in the development, use, and distribution of technology products or services. These can include consumer groups, advocacy organizations, and other groups that represent the interests of particular communities.		
Citizen participation on design	citizen participation on design refers to involving citizens in the design process of technology products or services. This can include collecting feedback from users or involving them in the ideation or testing phases of product development. Citizen participation can lead to more user-friendly and socially responsible products that better meet the needs of the intended users.	Community Engagement	Community Engagement refers to the active involvement and participation of citizens in various aspects of technology, including design, decision-making, and management. It involves citizen participation in the design and decision-making processes, ensuring user-friendly and socially responsible outcomes. Additionally, it emphasizes the co-management of technologies by residents, promoting ownership and collective decision-making within the community. Overall, community engagement fosters inclusivity, transparency, and the alignment of technology with community needs.
Citizen participation on decision making process	citizen participation on decision-making process refers to involving citizens in the process of making decisions about the use, development, and regulation of technology. This can include public hearings, referenda, and other forms of direct democracy, as well as involving citizens in the development of policy and regulations related to technology. Citizen participation in decision-making can lead to more democratic and accountable technology development and regulation.		
Resident co-management of technologies	The degree active involvement and participation of residents in the management and utilization of technologies within their community.		
Community engagement and communication	The strategies and methods used to foster local support and effectively convey the positive effects of the technology to diverse groups of residents, considering factors such as education levels, language proficiency, and political beliefs. This may involve tailored outreach programs, multilingual materials, targeted messaging, and inclusive dialogue to facilitate understanding and promote acceptance within the community.	Community Information and Engagement	Community Information and Engagement refers to the overall approach and activities used to foster local support for a technology and effectively communicate its positive effects to diverse groups of residents within a community. It involves employing strategies and methods that consider factors such as education levels, language proficiency, and political beliefs to ensure effective communication and engagement. This includes implementing tailored outreach programs, creating multilingual materials, employing targeted messaging, and facilitating inclusive dialogues. The goal is to promote understanding, facilitate acceptance, and encourage active participation within the community. Additionally, this term encompasses the process of disseminating information about living labs within a neighborhood and making their potential uses visible throughout the city, as well as effectively transferring information to residents during the implementation of a technology to ensure their understanding and engagement
Living lab communication	The process of effectively disseminating information about living labs within a neighborhood and making their potential uses visible throughout the city.		
Resident information communication	Resident information communication refers to the process of effectively transferring information to residents during the implementation of a technology. It involves various strategies and channels to inform residents about the purpose, benefits, and impact of the technology, ensuring their understanding and engagement in the process.		
Citizen urgency	The level of importance and urgency of a technology initiative from the perspective of a citizen	Stakeholder urgency	Stakeholder urgency refers to the level of importance and urgency of a technology initiative from the perspective of different stakeholders, including citizens and municipalities. It represents the sense of priority and pressing need that stakeholders attach to the implementation of a technology solution. This urgency can be influenced by various factors, such as the impact of the technology on the well-being of the community, the alignment with strategic goals and priorities of both citizens and municipalities, and the recognition of potential benefits or risks associated with the technology. Assessing stakeholder urgency helps in prioritizing and allocating resources effectively to address the most pressing needs and concerns of both citizens and municipalities in the adoption and implementation of the technology.
Municipality urgency	The level of importance and urgency of a technology initiative from the perspective of a municipality,		

Recognition for work	The acknowledgement and reward of the contributions of individuals or teams involved in implementing a technology initiative, such as through awards or public recognition.	Recognition and Motivation	Recognition and motivation refer to the acknowledgement and incentives provided to individuals or teams involved in implementing a technology initiative, as well as the underlying reasons or motives driving the initiative
Motives for initiative	The reasons why a technology initiative is being pursued, such as to address a societal need, to improve efficiency, or to enhance security.		
Contribution to awareness	The extent to which a technology initiative contributes to raising awareness of the potential benefits, risks, and impacts associated with the use of a particular technology.	Awareness and acceptance	Awareness and acceptance refer to the process of informing, educating, and engaging the community to raise awareness about the benefits, risks, and impacts of a technology initiative. It involves addressing initial concerns and reservations, promoting understanding, and mobilizing community members to actively participate in initiatives that enhance environmental quality and promote socio-technological acceptance.
Community Sensitization on Greener Public Spaces with Low Investment	Community Sensitization on Greener Public Spaces with Low Investment refers to the process of raising awareness and engaging the community in the importance and benefits of creating and maintaining greener public spaces with minimal financial investment. It involves informing, educating, and mobilizing community members to actively participate in initiatives that enhance the environmental quality of public spaces through sustainable and cost-effective methods		
Socio-Technological Acceptance	Socio-technological acceptance refers to the initial concerns and reservations expressed by residents in the surrounding area when new technologies are introduced, particularly due to their unfamiliarity.		
distribution of technology benefits	Distribution of technology benefits refers to degree of fair and inclusive allocation of benefits derived from the implementation of technologies, ensuring that all individuals and communities can access and enjoy the advantages they offer.	Equitable Technology Implementation (ETI)	Equitable Technology Implementation (ETI) refers to the fair and inclusive distribution of technology benefits among individuals and communities, ensuring universal access to advantages while being socially sensitive. It entails considering and addressing social and ethical impacts, aligning technological advancements with societal values and needs for a just and inclusive progress.

Governmental			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Compliance with public space consultation regulations	The extent to which a technology conforms to the regulations and requirements of public space consultation processes.	Regulatory compliance and permitting	Regulatory compliance and permitting refer to the adherence of a technology to relevant regulations, guidelines, and standards set forth by public space consultation processes, public space handbooks, established industry standards, and legislations. It involves ensuring that the technology meets the required legal and regulatory requirements, including obtaining necessary permits such as arboricultural permits for tree-related activities. Understanding and navigating the regulatory landscape is essential for the responsible and ethical development and use of technology within the designated jurisdiction.
Public space handbook compatibility	The extent to which a technology conforms to the guidelines and principles outlined in public space handbooks.		
Compliance to standards	The extent to which a technology meets the established standards and regulations in its field of application.		
Legislations	the laws and regulations governing the development, use, and distribution of technology products or services. These can include regulations related to data privacy, intellectual property, and safety standards. Legislations can help ensure that technology is developed and used in a responsible and ethical manner.		
Regulatory Landscape	he regulatory landscape refers to the national regulations and policies that govern the implementation and use of innovative technologies.		
Technology placement and regulations	The placement and regulations refer to possible locations where the technology can be implemented as well as with respect to regulations, permits and available subsidies.		
Arboricultural Permit	An arboricultural permit refers to a legal authorization or permit required by authorities for the cutting or removal of trees or for the planting of trees in certain areas.		
Contribution to municipal policies	The extent to which the use of the technology aligns with or contributes to the goals and objectives of municipal policies, such as sustainability or climate resilience.	Contribution to municipal policies	Contribution to municipal policies refers to the extent to which the use of the technology aligns with or contributes to the goals and objectives of municipal policies, such as sustainability or climate resilience.
Regulatory Advocacy	The degree a technology supports the influence and persuade governmental bodies to modify or create regulations that align with specific goals or interests. It involves presenting evidence, engaging with stakeholders, and making a case for policy changes to support a desired outcome.		
Funding support	Funding support refers to the availability of subsidies or financial assistance provided by various entities, including urban, provincial, national, and international sources.	Funding support	Funding support refers to the availability of subsidies or financial assistance provided by various entities, including urban, municipal, provincial, national, and international sources.
Presence of product warranty	A guarantee or promise made by the manufacturer or seller of a technology or system to repair or replace the product if it fails to meet certain performance standards or expectations within a specified time period.	Legal product performance assurance	Legal product performance assurance refers to the presence of a warranty provided by the manufacturer or seller of a technology or system. This warranty serves as a guarantee that the product will meet specified performance standards or expectations within a defined time period. It ensures that the manufacturer or seller is responsible for repairing or replacing the product if it fails to meet the promised level of performance, functionality, or reliability. The technology warranty provides customers with confidence in the quality and reliability of the product, offering protection and peace of mind.
Technology warranty	A technology warranty is a formal assurance provided by the manufacturer or supplier of a technology product or system, guaranteeing its performance, functionality, and reliability for a specified period of time		
Legislative Mandate	A legislative mandate refers to the legal requirement or obligation imposed by authorities to use a specific innovation as compensation for urbanization or other related purposes. This can be done to ensure the implementation of sustainable practices, environmental mitigation, or to achieve specific policy objectives. A legislative mandate can provide a legal framework for promoting the adoption and widespread use of the innovation, making it obligatory for relevant stakeholders to incorporate the technology in their projects or operations.	Legislative Mandate	A legislative mandate refers to the legal requirement or obligation imposed by authorities to use a specific innovation as compensation for urbanization or other related purposes. This can be done to ensure the implementation of sustainable practices, environmental mitigation, or to achieve specific policy objectives. A legislative mandate can provide a legal framework for promoting the adoption and widespread use of the innovation, making it obligatory for relevant stakeholders to incorporate the technology in their projects or operations.

impact			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Functionality impact	The impact of the technology on the functionality of the system in which it is implemented.	Integration and Replacement Impact	Integration and replacement impact refers to the overall effect of implementing a new technology or system on the functionality, continuity, and physical components of an existing infrastructure or ecosystem. It encompasses both the disruption caused by integrating the technology into the system and the management of replaced materials and structures. This includes assessing the extent of disruption to system functionality, the handling and disposal of replaced materials, and the proper procedure for replacing existing structures. Evaluating integration and replacement impact helps ensure a smooth transition, minimize disruptions, and optimize the performance of the system with the new technology.
Disturbance of inplace function	Refers to the extent to which the implementation of a new technology or system disrupts the functioning of the existing infrastructure or ecosystem.		
What to do with replace material	the process of handling and disposing of materials that are replaced by the technology, such as old roofing materials or pavement.		
Replacement of in place structure	The process of removing and replacing an existing structure with a new system or technology.		
Installation impact	Installation impact refers to the effects or consequences associated with the process of installing a technology or infrastructure. It encompasses the potential disruptions, changes, or considerations that arise during the installation phase such as anchoring and removing of the in place functionality.		
Impact on building facades	The potential harm or impact on building facades refers to the risks and effects that a particular technology or system may have on the exterior surfaces of buildings		
Water pollution	the release of harmful substances, such as chemicals and waste products, into bodies of water as a result of technology-related activities.	Water Quality Impact of Technology	The water quality impact of technology refers to the extent to which a technology can affect the quality of water through various pathways. This includes the release of harmful substances that can enter water bodies through runoff or other means, as well as considerations related to factors such as leaf litter from trees. It encompasses the potential for pollutants or contaminants to be introduced into water sources, posing risks to aquatic ecosystems and the overall water quality. Assessing the water quality impact of technology helps identify potential sources of contamination and implement measures to prevent or mitigate adverse effects, ensuring the protection and sustainability of water resources.
Leaf litter impact	The potential effect of tree leaf shedding on the water quality of nearby water sources, which may include considerations of nutrient runoff, organic matter decomposition, and potential impacts on aquatic ecosystems.		
Potential soil contamination	The risk of soil contamination from the technology or its components during installation, use, or disposal.	Soil-Environment Relationship	The soil-environment relationship refers to the dynamic interaction between the technology and the surrounding soil ecosystem. It encompasses various aspects, including the potential for soil contamination, the reactions of soil organisms to the technology, soil drought and the impact of soil composition on the technology's performance. This relationship considers the risk of soil contamination during the technology's life cycle, the responses of soil organisms to the technology's components and vegetation, and the influence of different soil types on the overall functioning and effectiveness of the technology. Understanding and managing the soil-environment relationship is crucial for promoting environmental sustainability and optimizing the performance of the technology within its soil ecosystem
Soil Organisms' Reactions to the Technology	The soil organisms' reactions to the technology refer to the responses and interactions of microorganisms, insects, fungi, and other soil-dwelling organisms to the presence and influence of the technology's components and vegetation		
Soil Impact on Performance	Soil Impact on Performance refers to the influence of the type of soil beneath a technology on its overall performance. Different soil compositions, such as sandy, loamy, clayey, or compacted soils, can have varying effects on the functioning and effectiveness of the technology. Factors such as water infiltration, drainage, root penetration, nutrient availability, and stability can be influenced by the soil type.		
No Groundwater Recharge	The technology's potential to limit or eliminate groundwater recharge.	Hydrogeological Interaction	Hydrogeological interaction refers to the interplay between a technology and the groundwater system. It includes the potential of the technology to impede or restrict groundwater recharge, as well as the impact of groundwater levels on the performance and functionality of the technology. This interaction considers how the technology may affect the replenishment of groundwater resources and how the groundwater level, in turn, can influence the effectiveness and operation of the technology. Understanding and managing the hydrogeological interaction is essential for sustainable water resource management and ensuring the optimal functioning of the technology within the groundwater environment.
Groundwater Level Impact on Performance	Groundwater Level Impact on Performance refers to the influence of the groundwater level on the performance and functionality of a technology.		

Potential negative effects	The potential harm or negative consequences that a technology initiative could have on individuals, communities, or the environment, such as privacy concerns, social inequality, or environmental degradation.	Technology's dual impact	Technology's dual impact refers to the concept that technological advancements and innovations bring both benefits and potential harm or negative consequences to individuals, communities, or the environment. It acknowledges that technological initiatives can have trade-offs, encompassing advantages and drawbacks such as privacy concerns, social inequality, or environmental degradation
Vulnerability to damage	The susceptibility of the technology to damage from external factors, such as weather, vehicle traffic, or vandalism.	Technology Resilience and Robustness	Technology resilience and robustness refers to the capacity of a technology to withstand and recover from various forms of stress, including damage, wear, misuse, and neglect. It encompasses the vulnerability of the technology to external factors such as weather, vehicle traffic, vandalism, and improper use. Additionally, technology resilience and robustness considers the wear resistance of the system, its ability to withstand physical wear and tear caused by environmental factors and heavy usage. The concept also takes into account the potential for misuse or intentional abuse, as well as the likelihood of neglect and poor maintenance, which can compromise the performance and longevity of the technology. Enhancing technology resilience and robustness is crucial for ensuring the sustained functionality and durability of the system in the face of challenges and adverse conditions.
Wear resistance	The ability of the technology to withstand physical wear and tear caused by traffic and environmental factors.		
Vulnerability to misuse	The potential for the technology to be misused or damaged due to improper use or intentional abuse.		
Vulnerability to neglect	The likelihood that the technology will be neglected or poorly maintained, which can lead to decreased performance and lifespan.		
Technology Vulnerability to Weather	Technology vulnerability to weather refers to the susceptibility of a technology to adverse or extreme weather conditions, which may impact its performance, functionality, or durability.	Climate Resilience of Technology	Climate resilience of technology refers to the overall ability of a technology or system to withstand and adapt to various weather conditions, ensuring its performance, functionality, and durability. It encompasses measures and considerations such as vulnerability to weather, wind displacement, seasonal effects, slip hazards, dry period maintenance, drought resilience, and peak rainfall response. By integrating climate resilience into the design, implementation, and maintenance of the technology, its capacity to withstand adverse weather events and changes in environmental conditions is enhanced, promoting safety, effectiveness, and longevity.
Wind displacement considerations	Wind displacement considerations refer to the assessment and evaluation of the potential impact and risks associated with tree movement caused by wind in relation to nearby buildings and people. It involves understanding the dynamics of tree movement, assessing the potential hazards, and implementing measures to mitigate any potential dangerous situations.		
Seasonal effects	Seasonal effects refer to the natural and recurring changes that occur in trees and plants throughout different seasons of the year. These effects include various phenomena such as leaf shedding, seed production, flowering, and changes in growth patterns and physiological activity.		
Slip hazard	A slip hazard refers to the potential risk of slipping or losing traction on a surface, which may pose a safety concern for individuals using the technology.		
Dry Period Maintenance	Dry period maintenance refers to the specific actions and strategies employed to ensure the proper functioning and health of the technology during periods of limited or reduced rainfall and dry conditions.		
Drought Resilience	Drought Resilience refers to the ability of a technology or system to withstand and adapt to prolonged periods of drought without compromising its functionality or performance. It encompasses the technology's capacity to mitigate the impact of water scarcity and maintain its intended benefits in the face of limited water availability.		
Peak rainfall response	The ability of a technology to handle large rainfall events and prevent flooding or other related issues.		
Impact on biodiversity	The impact on biodiversity refers to the effects that the technology has on the variety, abundance, and distribution of plant and animal species within the surrounding ecosystem.	Ecological Impact	Ecological impact refers to the influence and consequences that a technology has on the surrounding ecosystem, including its effect on biodiversity and the ecological response of organisms. It encompasses the changes in the variety, abundance, and distribution of plant and animal species resulting from the technology's presence or intervention. The ecological response refers to the reactions and behaviors exhibited by organisms in response to the technology, taking into account factors such as design, habitat suitability, and local ecological conditions. Assessing and understanding the ecological impact helps
Ecological response	The reaction and behavior of organisms, such as birds, fungi, and lichens, to a particular technology or environmental intervention, which can vary depending on factors such as design, habitat suitability, and local ecological conditions.		
Technological Impact on Ecological	Technological impact on ecological connectivity refers to the influence of a specific technology on the connections and interactions between ecological entities. It assesses how the implementation or presence of a technology can enhance or disrupt ecological connectivity. This impact can be positive, with technologies		

Connectivity	designed to promote ecological corridors, wildlife passages, or green infrastructure that facilitate connectivity. Conversely, technologies can also have negative effects, such as habitat fragmentation, pollution, or barriers that impede ecological connectivity. Evaluating the technological impact on ecological connectivity helps understand and manage the potential consequences on biodiversity conservation, species movement, and ecosystem resilience.		to ensure that the technology's implementation considers and minimizes negative effects on biodiversity, promotes ecological balance, and supports the well-being of the surrounding ecosystem.
Root Impact on Path Material	Root Impact on Path Material refers to the potential effect of the roots of vegetation planted around a path on the integrity and stability of the path material. In some cases, the roots of certain plant species can grow and spread, causing displacement, cracking, or other forms of damage to the path material	Vegetation-technology Interaction	Vegetation-technology Interaction refers to the relationship between surrounding natural elements and the technology or system, including the impact of plant roots on the materials and the ability of plants to grow through different surfaces. Managing this interaction is crucial for maintaining the integrity and functionality of technology or system while accommodating desired vegetation.
Plant Growth Through Material	Plant Growth Through Material refers to the phenomenon where plants have the ability to grow and penetrate through certain materials, such as soil, pavement, or other surfaces.		
Fire Resistance	refers to its ability to resist the spread of fire or its vulnerability to catching fire and sustaining damage from fire.	Fire Resistance	refers to its ability to resist the spread of fire or its vulnerability to catching fire and sustaining damage from fire.
Heath effects of technology	The health effects of the technology refer to the positive or negative impacts it has on human health and its potential to contribute to healthcare cost savings.	Heath effects of technology	The health effects of the technology refer to the positive or negative impacts it has on human health and its potential to contribute to healthcare cost savings.
Pest and Pathogen Management in Water Buffer Technology	Pest species and pathogen development in water buffer technology refer to the potential challenges and risks associated with the presence and growth of pests and pathogens in water buffer storage systems. These systems, designed to store and manage water for various purposes, can create an environment conducive to the proliferation of pests and the development of harmful microorganisms.	Pest and Pathogen Management	Pest and Pathogen Management refers to the proactive measures and strategies implemented to prevent and control the presence and proliferation of pests, pathogen due to the implementation of the technology or system. This management approach aims to minimize the risks associated with pests and pathogens, ensuring the functionality and integrity of the technology while safeguarding public health and the environment.
Mosquito Infestation	Mosquito Infestation refers to the potential of the technology or the environment created by the technology that promotes conditions suitable for mosquito breading		
Shoe Cleanliness	Shoe Cleanliness: This term refers to the level of dirt or debris that may accumulate on shoes when walking on or interacting with the technology.	End User Impact	End User Impact refers to the impact on end users encompasses the various effects that the technology has on individuals who interact with it. This includes factors such as comfort, convenience, safety, accessibility, and overall user experience. For example, one aspect of end user impact is shoe cleanliness, which refers to the level of dirt or debris that may accumulate on shoes when walking on or using the technology. Other aspects of end user impact can include ease of use, satisfaction, productivity, and any potential physical or psychological effects experienced by the users.

Implementation & application			
Information aspect	**Definition**	**Cluster**	**Cluster definition**
Application possibilities of technology	The potential or feasible uses of a technology in different domains or contexts.	Versatile Application	Versatile application refers to the wide range of potential uses and adaptability of a technology in different domains, contexts, and settings. Versatile technologies are capable of fulfilling multiple functions and can be used in various configurations to meet different design needs and objectives. They are compatible with different environments, such as pedestrian zones and areas with vehicular traffic, making them multi-functional and adaptable to diverse use cases.
Applicability in market or event settings	The suitability of the technology for use in temporary or transient settings, such as outdoor markets or events.		
Possible application beyond parking lots	The potential for the technology to be used in applications beyond parking lots.		
Roof-based Implementation	Roof-based Implementation refers to the application of a technology on rooftops to achieve specific objectives and benefits. This involves installing and integrating the technology's components and features on the roof surface, taking into account factors such as structural considerations, waterproofing, and compatibility with existing rooftop infrastructure.		
Versatility of use	The versatility of a technology refers to its ability to be used in various applications and configurations to meet different design needs and objectives.		
Multi-functional compatibility	Multi-functional compatibility refers to the ability of a technology or system to accommodate and function effectively in various contexts or environments, including both pedestrian zones and areas with vehicular traffic, such as freight vehicles and cars.		
Previous technology deployment	Refers to the implementation or installation of a technology solution in the past, which may have been successful or unsuccessful. It can include a range of factors such as the cost, benefits, challenges, and outcomes associated with the technology deployment. It is often used to inform decision-making for future technology deployments and to identify best practices or lessons learned from previous experiences.	Technology Deployment History	Technology deployment history involves examining the historical implementation and installation of technology solutions. It encompasses evaluating various aspects, including costs, benefits, challenges, and outcomes of previous deployments. The analysis of deployment history serves as a valuable resource for guiding future technology implementations and identifying key lessons learned from past experiences.
Technology Performance Studies	Technology Performance Studies refers to scientific investigations and studies conducted to assess the functionality and performance of a particular technology. These studies aim to provide evidence-based information on how well the technology performs in real-world conditions and whether it meets its intended goals and objectives.		
Context readiness for implementation	Refers to the suitability of the environment or context for the successful implementation of a technology, including factors such as existing infrastructure, available resources, regulatory framework, and social acceptance.	Context readiness for implementation	Refers to the suitability of the environment or context for the successful implementation of a technology, including factors such as existing infrastructure, available resources, regulatory framework, and social acceptance.
Installation responsibility	Installation responsibility refers to the entity or party responsible for the proper installation of a technology or system. It involves the physical implementation and setup of the technology according to the specified guidelines, standards, or instructions provided by the manufacturer or relevant authorities.	Installation responsibility	Installation responsibility refers to the entity or party responsible for the proper installation of a technology or system. It involves the physical implementation and setup of the technology according to the specified guidelines, standards, or instructions provided by the manufacturer or relevant authorities.