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Allied Architectural Digital Solution Design for All at Landscape & Safe Community Health Facilities at Post COVID era and in Climate Change.

^[1]Tilemachos K. Koliopoulos, ^[2]Dimitris Papakonstantinou

^[1] Managing Director Telegeco Research & Development, ^[2] Researcher, Telegeco Research & Development,

^[1]tilkolgr@gmail.com, ^[2]telegeco@gmail.com

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Abstract— *These This paper focuses on the digital architectural tools and associated digital techniques for investigated architectural design solution elements of safe building facilities and designs at outdoors, indoors for everyone in secure community health sites including green architecture for integrated community health tourism facilities. The paper presents a framework for architectural landscape upgrade supporting proper environmental health protection policy and safe architectural infrastructure for specific spatial relationships in promoting health care goods, services through alternative tourist activities within safe environmental health spaces in the era of climate change and the post-pandemic COVID-19 era. Additionally, current issues such as the impact of the pandemic on visits to community health facilities and adaptations of sustainable architecture digital tools and techniques to new challenges within learning environments and educational tourism are explored.*

Index Terms— *digital architectural design tools for all, engineering education for sustainable tourism facilities at open spaces environmental health at post COVID-19 era, sustainable community health facilities*

I. INTRODUCTION

This working study emphasizes the promotion of cultural elements of sustainable community health tourism activities either at small scale or bid scale interactive activities. The basic characteristics are investigated for integrated architectural elements that are described to understand the identification of safe outdoors and indoors through cultural journeys to virtual cultural monuments in enclosed spaces, outdoors, or their representations for the promotion of architecture in particular aligned architectural community health infrastructures.

To further expand the understanding of sustainable architecture in community health tourism activities, are presented useful digital design solutions for all. Particular techniques in terms of safety and sustainability are analyzed focused on interdisciplinary approach to addressing this topic, providing a brief analysis of the impact of digital tools on ecological green architecture digital tools for visitors,

tourists in useful interactive activities[1-12, 15-18, 22, 41-45].

Nowadays, useful digital sanitary drawings, geoinformation data, apply properly VBA macros at Autodesk environments should be used as useful digital architectural tools and techniques that should be applied for sustainable applications, reclamation projects at brownfields, landfills, soil health protection, bioremediation projects, designs for all and sustainable safe green tourism facilities, urban smart tourism, promoting particular alternative types of tourism. Also several learning applications could be used also for educational purposes and training between stakeholders for particular tourism activities and training techniques using digital sanitary drawings, relative educational, training content with avatars, animations and 3d digital objects [44-49, 50, 52].

Moreover, brownfields, downgraded spaces and associated open spaces like old closed landfills, sites with sewage treated sludge from batch bioreactors could be properly upgraded as safe travelling attractions for educational

environmental health tourism activities and alternative types of tourism [13, 14, 19-22]. However, the landfill sites should be monitored regularly for any signs of potential issues such as ground water contamination, leachates leakage, or gas emissions. Monitoring techniques may include the use of wells, gas probes, and surface water sampling to ensure that the landfill is operating as intended and is not causing harm to the surrounding environment [23-26, 48, 50-52].

Nowadays, digital architectural tools are necessary for proper upgrade landscape at brownfields, landfills, and sustainable green tourism facilities. Such utilities are described below with their relative software, associative firmware that can be found at internet [25, 46-52].

- AutoCAD: A popular software used by architects and designers for creating precise 2D and 3D drawings of buildings, landscapes, and other structures.
- SketchUp: A 3D modeling program that allows architects to quickly and easily create detailed landscapes, buildings, and other designs.
- Lumion: A real-time 3D visualization tool that allows architects to create stunning visualizations of their landscape designs.
- VizTerra: A landscape design software that provides architects with a wide range of tools for creating detailed 3D models of outdoor spaces.
- Land F/X: A landscape architectural design software that integrates with AutoCAD and allows architects to create detailed plans for outdoor spaces.
- DynaSCAPE: A landscape design software that helps architects and designers create detailed planting plans, site plans, and 3D models of outdoor spaces.
- Rhino3D: A versatile 3D modeling tool that allows architects to create complex and detailed designs of buildings, landscapes, and other structures.
- GardenCAD: A software specifically designed for landscape designers, GardenCAD provides computer aided digital design tools for creating detailed plans and designs for outdoor spaces.
- Opensim: Educational environments supported by 3D graphics for complex and detailed designs of constructions, digital scripts for interactive e-learning and animation with avatars

- 3Ds Max: A versatile 3D modeling tool that allows architects to create complex and detailed designs of architectural materials buildings, landscapes, and other structures.
- Gimbo: Open source software digital image painting and processing it can collaborate with drawings from Autodesk CAD, Revit and others,

However, sanitary drawings and proper digital drawings for sustainability, health and safety can be used as a base for landscape upgrade at brownfields, landfills. Hence, at brownfields, sanitary landfill sites a digital architectural landscape upgrade could be established based on landfill designs and sanitary drawings for biogas exploitation so as to cover energy needs for renewable resources like electricity, heating, lighting.

Furthermore, modern biomass crane series could be properly designed for harsh industrial environments, making it ideal for biomass energy plants. Its advanced controls and proper automation technology that is available could ensure precise and efficient material handling, improving overall plant productivity.

In addition to its reliability and efficiency, proper use of biomass crane also offers safety features such as overload protection, emergency stop devices, and collision avoidance systems. These features help to protect both the equipment and the operators, ensuring safe and smooth operations. Proper architectural digital designs could be used so as to apply efficient steel or composites lightweight structures within optimum beam designs as well as frame designs and their associative site surveying geospatial applications. In next figure is presented a beam system to support associative crane for biomass plants and other relative uses for green tourism and architectural upgrade landscape at brownfields [22-31, 33-40] .

II. USEFUL ARCHITECTURAL DIGITAL TOOLS FOR SAFE FACILITIES - LANDSCAPE UPGRADE

In order to integrate architectural digital tools for safe community health tourism facilities within landscape upgrade and sustainable tourism facilities, a comprehensive methodology can be followed as a part for the investigated framework:

Site Analysis: Begin by conducting a detailed analysis of the existing site conditions, including topography, vegetation, soil quality, water bodies, climate, and surrounding built environment. This will help in identifying the key characteristics and constraints of the site that need to be considered in the design process.

Digital Surveying: Utilize digital surveying tools such as LiDAR scanners, drones, and 3D modeling software to create accurate digital models of the site. This will provide a detailed understanding of the existing conditions and help in visualizing the proposed design interventions.

Concept Development: Use parametric design tools and software to explore various design concepts that respond to the site conditions and project requirements. This can include generating design options for landscape elements, tourism facilities, circulation patterns, and sustainable features such as green roofs, rain gardens, and renewable energy systems.

Environmental Analysis: Conduct environmental analysis using simulation tools to assess the performance of the design in terms of sunlight exposure, wind patterns, temperature modulation, and water management. This will help in optimizing the design for sustainability and comfort.

Collaborative Design: Collaborate with multidisciplinary teams including architects, landscape architects, engineers, environmental consultants, and stakeholders to integrate their expertise into the design process. Use BIM (Building Information Modeling) software to facilitate coordination and communication between team members.

Virtual Reality and Augmented Reality: Use VR and AR technologies to create immersive experiences of the proposed design, allowing stakeholders to visualize and experience the project before construction. This can help in gaining feedback and making informed decisions about the design.

Digital Fabrication: Utilize digital fabrication tools such as CNC machines, 3D printers, and robotic construction equipment to prototype and fabricate custom elements for the landscape and tourism facilities. This can help in achieving a high level of precision, efficiency, and sustainability in construction.

Monitoring and Evaluation: Implement digital monitoring systems such as sensors and IoT (Internet of Things), gps devices to track the performance of sustainable features, energy consumption, water usage, and visitor behavior. Digital sanitary drawings, geoinformation utilities and numerical modeling utilities with risk assessment digital computational tools could properly utilized for landscape upgrade landscape, safe building facilities, environmental health and public health protection. This data can be used to assess the effectiveness of the design and make adjustments for continuous improvement.

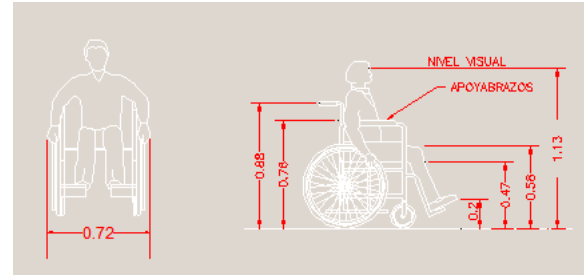
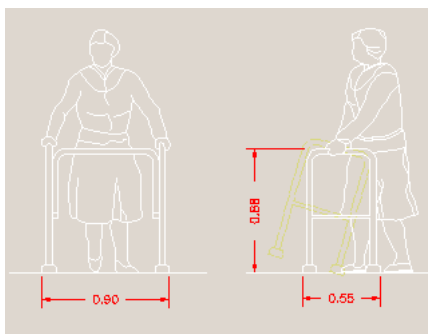


Figure 1. Useful computer aided design solutions for applications to promote safe designs for all at sustainable tourism facilities and safe mobility, accessibility to community health facilities

In figure 1, useful computer aided designs for all are presented in terms of accessibility for elderly people and people with disabilities that should exist at investigated upgraded landscapes and mobility facilities around either small scale community health tourism infrastructures or big scale ones. Several alternative types of tourism could exist supporting several web, smart multilingual applications at ecological tourism activities.

Also at community health tourism facilities good experiences could exist for marketing purposes applying proper computer aided architectural drawings for landscape upgrade as it is presented below in figure 2 for an indicative small scale community health facility.

Moreover, in figure 2 useful architectural computer aided design solutions (CAD) applications are presented at indoors, outdoors at community health facilities within alternative types of tourism and architectural upgrade landscape at brownfields, close to landfill sites at post COVID-19 era and in climate change. Proper monitoring schemes, digital tools and sanitary drawings techniques should exist for sustainable building facilities at community health facilities. Useful e-learning tools could be used for training staff at tourism sector as well as for educational tourism purposes [1-4, 6-10, 18-22].

Figure 2. Plan of landscape upgrade at community health tourism apartments applying proper computer aided design digital tools that could be applied for efficient designs for all at post pandemic era.

Also useful computer aided design three dimensional digital graphics solutions for particular educational applications so as to promote safe green tourism and architectural upgrade landscape at brownfields, landfills at post COVID-19 era and in climate change [3-8, 18, 20, 26]. Utilities like opensim not only for educational purposes but also for safe infrastructures at landscape upgrade and good environmental health conditions at indoors, outdoors that should exist. All the above should be taken into account not only for community health facilities but also for regular health building facilities where their architectures at indoors, outdoors should be considered as hotel resorts providing associative accommodation services with adding values as safe integrated health tourism upgraded architectural facilities [1-6, 18-22, 48].

Moreover based on figure 2, useful computer aided design solutions, digital tools could be applied for digital architecture applications, techniques in order to promote safe open spaces next to designs for all at health tourism facilities and architectural landscape upgrade. However, by following the investigated proposed framework, dynamic partnerships between stakeholders, architects, engineers can leverage applying proper digital tools, techniques to upgrade landscapes and create sustainable tourism facilities that enhance the visitor experience while minimizing environmental impact. Waterways could exist at open spaces supporting particular reclamation projects for landscape upgrade next to community health buildings.

Based on the above useful results could be established taking into account relative sanitary drawings at proper project management for landfill gas exploitation [19-25]. Hence, for an investigated 30 m circular area for biogas pumping at brownfields, landfills below are presented useful architectural landscape upgrade solutions based on relative sanitary drawings applying proper blocks of trees with computer aided design like libre office or acad developed by autodesk and other ones.

III. APPLIED FRAMEWORK OF DIGITAL TECHNIQUES FOR SUSTAINABLE HEALTH TOURISM FACILITIES

By following this methodology, stakeholders, engineers can leverage digital tools to upgrade landscapes and create sustainable tourism facilities that enhance the visitor experience while minimizing environmental impact. Based on the above useful results could be established taking into account relative sanitary drawings at proper project management for landfill gas exploitation [8, 12, 23, 32]. Hence, for an investigated indicative 30 m circular area for biogas pumping exploitation at landfills below are presented useful architectural landscape upgrade solutions based on relative sanitary drawings applying proper blocks of trees with computer aided design like libre cad or acad developed by autodesk other ones [42-48, 52-53].

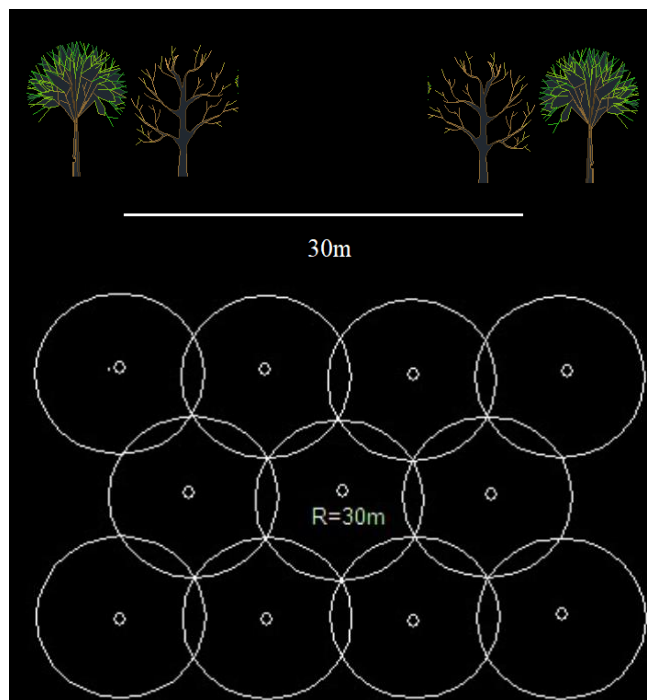


Figure 3. Useful computer aided design solutions for digital drawings applications in order to promote landscape upgrade at safe outdoors next to community health tourism facilities.

In figure 3 are presented useful computer aided design solutions for applications to promote renewable resources exploiting biogas emissions for electricity and heating supporting green health tourism facilities and associative architectural upgrade landscape at brownfields, landfills sites at post COVID-19 era and in climate change. Based on figure 3, proper marketing advertisements for alternative types of tourism should exist so as to promote sites for particular alternative types of tourism at outdoors activities for travel experiences within safe facilities, efficient green designs, clean technologies, safe eco-tourism veterinary activities and landscape upgrade at brownfields that should have maintenance and to be upgraded within robust sustainable designs.

Proper combination of geo-information digital utilities, computer numerical modeling computational results, digital sanitary drawings and digital architectural drawings, techniques and tools should exist within relative indicative veterinary standards and guidelines that should be applied for landscape architectural upgrade at particular associative safe sustainable facilities [6, 16-20, 22]. Therefore, ready blocks of drawings in dxf format, dwg format for computer aided design (CAD) supported with macros could be useful not only for stakeholders but also for travelling visitors supported by educational tourism activities around sustainability and public health protection. Based on the right digital utilities to be used there will be useful services within architectural design for landscape upgrade, safe indoor, outdoor spaces applying proper extensions for investigated particular reclamation projects at brown fields, downgraded spaces at next topics

- Landscape Design for sustainable building facilities, environmental friendly solutions, green materials, supporting renewable resources in climate change management

- Landscape Architecture for safe activities within alternative types of tourism at post COVID-19 pandemic era
- Landscape Planning for sports tourism activities, e-learning applications with educational and ecological tourism based on applied sanitary digital drawing tools and associative digital utility techniques
- Urban Planning and environmental health conditions at closed or open construction facilities
- Environmental Planning Urbanism activities within safe construction facilities at open spaces supporting educational tourism activities for tourists, training schemes for stakeholders, ICT's for right project management within smart surveying environments
- Sustainable Development, promotion of monuments within Landscape History and Heritage

Based on the above, in figure 4 a useful framework supporting proper environmental health protection policy and safe architectural infrastructure that is presented for the right application and combination of architectural digital tools and techniques for safe sustainable indoor, outdoor environments. In this way could be achieved efficient landscape upgrade at health tourism infrastructures for safe, comfortable conditions at brownfields or downgraded areas at post pandemic era and in climate change.

It will be useful for sustainable development architectural designs that could be achieved for architectural landscape upgrade, safe sustainable green community health tourism facilities, educational tourism, environmental health and public health protection for graduate students, tourists, stakeholders applying properly the presented framework at post covid-19 era and in climate change management. The investigated framework will be a useful digital interactive virtual learning, reading material for training, educational purposes between stakeholders, graduate students, tourists filling the knowledge gaps applying properly digital tools, digital training techniques within CAD systems, digital utilities in virtual e-learning educational architecture environments.

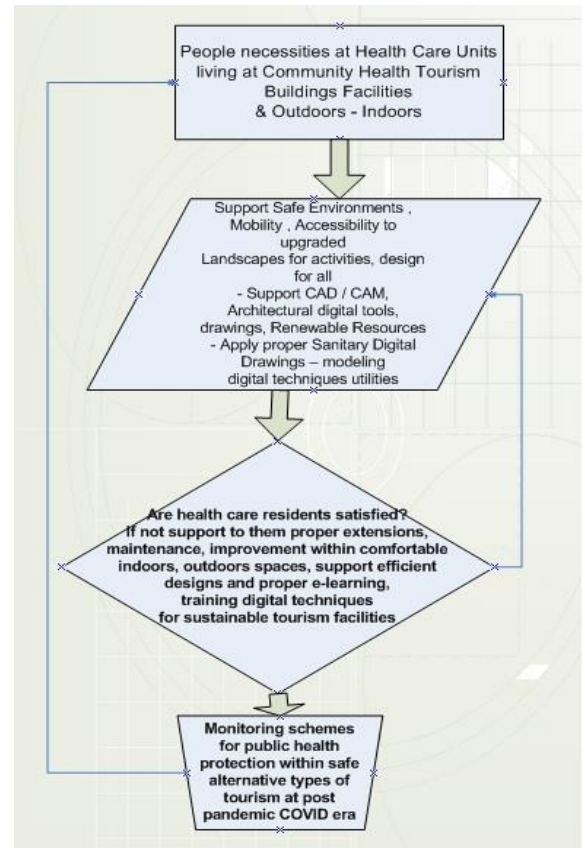


Figure 4. A framework for architectural landscape upgrade for specific spatial relationships in promoting health care goods, services through alternative tourist activities within safe environmental health spaces in the era of climate change and the post-pandemic COVID-19 era

Moreover, stakeholders should take into account the selection of trees that are appropriate for the site conditions, such as soil type, sunlight exposure, and climate. Also stakeholders should ensuring that trees are placed strategically to provide shade, screening, and aesthetic appeal, incorporating trees of different heights and sizes to create a layered and dynamic landscape. Proper types of trees should exist that could be maintained at brownfields, landfill sites [23-24].

Useful educational and training activities could exist for stakeholders applying proper engineering education applications promoting efficient architectural green design solutions within opensin, moodle, sanitary digital drawing tools, numerical modeling, web applications or other relative applications [15-23, 32, 46-52]. In this way is protected public health, sustainability providing opportunities for stakeholders.

Overall, by following these guidelines and utilizing computer aided design, a well-planned and visually appealing architectural landscape upgrade can be achieved through the proper selection and placement of trees. However, considering the long-term maintenance needs of the trees, such as pruning, watering, and fertilizing, in the design process proper cranes and mechanical equipment should exist for the sustainability and public health protection at post covid-19 era so as to support people that injured during the pandemic and due to lock downs that existed.

IV. DECLARATION NO CONFLICT BETWEEN AUTHORS

There is no conflict between authors for the presented working study in this paper.

CONCLUSION

In conclusion, proper planning and implementation of landfill closure and post-closure care measures are crucial to minimizing environmental hazards and ensuring the long-term safety of closed landfills. By following proper monitoring digital drawing techniques within useful architectural digital tools, designs for landscape upgrade and standards for safety guidelines and regulations, landfill stakeholders can effectively manage the potential risks associated with closed landfills, associated brownfields and protect the surrounding environment and public health. Proper digital tools should be used for efficient diadistic architectural designs, natural ecological sites, monuments, educational tourism activities, and experiences for tourists, stakeholders. The presented framework could be the base for expansions that could exist at particular sites that can be met in practice.

Ongoing monitoring and maintenance of the landfill site are necessary to address settling, erosion, drainage, leachate, and gas issues that may arise over time. Useful outcomes presented for stakeholders in terms of sustainable community health infrastructures, educational tourism digital utilities that promote engineering education, sustainability, environmental health and public health protection.

By following best practices in digital tools, techniques for landscape upgrade sustainable community health tourism facilities at brownfields, landfill closure and post-closure care, landfill owners can fulfill their responsibility to safeguard the environment and public health for years to come. In this way sustainability can be achieved for safe sustainable tourism facilities, promoting associative experiences within alternative types of tourism, and also is protected environmental health and public health. Hence, useful sustainable development architectural designs could be achieved for architectural landscape upgrade, safe sustainable green tourism facilities, educational tourism, environmental health and public health protection for graduate students, tourists, stakeholders applying properly the presented framework at post covid-19 era and in climate change management.

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AUTHORS PROFILE



Tilemachos K. Koliopoulos completed his Ph.D. research in numerical modeling and ICT applications for risk assessment and decision-making at Strathclyde University in the U.K. He has been a researcher, scientific, laboratory collaborator and adjunct Professor at the University of West Attica, and the Technological Educational Institute of Athens in Greece. He has worked also for the National Agricultural Research Foundation in Athens in Greece and has also been a Professor at the Technical Academy of Greek Air Forces. Currently, he is working as Managing Director at Telegeco Research Development Services - Engineering, Socioeconomic services in Greece, URL: www.telegeco.gr. He has been a reviewer for several Journals and has worked in the past on several research-funded national and international projects. He supports several charity activities like support at RAYMONDNICOLETTRUST's charity team, <https://orcid.org/0000-0001-6758-6534>



Dimitris Papakonstantinou completed his studies at Agricultural University of Athens. He is agricultural professional engineer. His research interests are in public health protection, monitoring schemes, food security, and sustainable tourism development. He has worked for public sector as well as for private sector at several educational and professional projects. He has participated at several funded projects.