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Title

Salutogenic Approach in Utilising Building Information Modelling

Session 3
Global Health, Built Environment and Urban Planning

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Salutogenic Approach in Utilising Building Information Modelling

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AIM & OBJECTIVES OF STUDY

To determine the barriers of applying salutogenic approach in design and construction phases to create healthy built environments.

To determine how salutogenic design is being incorporated within the Building Information Modelling (BIM) process throughout the entire supply chain.

CONTEXT

- Increased life expectancies
- Support health of human beings
- Quality of life and well being

- Built and Natural Environment
- Design standards for health at a global level
- Escalation of future health care costs

OBJECTIVES AT INTERNATIONAL LEVEL

- Health is dependant on the outcome of economic, social and environmental policies (World Health Organisation [WHO], 2012).
- Embedding a people-centered approach into health systems (Organisation for Economic Cooperation and Development [OECD], 2017).
- Promote team-based care design, more intelligent use of technology (Organisation for Economic Cooperation and Development [OECD], 2017).
- Address contemporary needs from a salutogenic perspective (International Academy for Design and Health [IADH], 2017)

ARRAY OF ISSUES

- Multicomplex issues of design parameters – salutogenic approach (Dilani, 2008)
- To translate theory into therapeutic spaces (Shackell and Walter, 2012)
- Design characteristics of urban places outlining the relationship between the built environment and health (Glasgow Centre for Population and Health, 2013)
- Influence of building design on physical, mental and social health (Institute of Public Health Ireland, 2006)
- Understanding how people's life is shaped by the physical environment (buildings and urbanisation), the social environment (moods and behaviours), natural environments (air, earth and water) and interior environment (attitudes, beliefs, intentions and values) (University of Minnesota, 2016)

DESIGN COMPONENTS FOR SALUTOGENIC APPROACH

- Seek ways to improve existing processes and modalities (OECD, 2017)
- Embedding Building Information Modelling in the Supply Chain (BIM Prospects UK, 2017)
- Knowledge Sharing
- Design characteristics of urban places outlining the relationship between the built environment and health
- Implementing BIM – BIM Process
- Collaboration with wide stakeholder base

RESEARCH METHODOLOGY

Qualitative phenomenological semi-structured interviews: (Malta , EU)

- Health and architecture professionals.
- Contractors and developers of design and build projects.

Inclusion criteria:

- Purposive selected participants who worked directly in design or construction of health related facility.

Data Analysis:

- Thematic Analysis.

RESULTS – KEY THEMES

Cost and value of the project

- *"From my experience clients want to maximize floor space and try to keep the projects on low budgets"*
- *"on many occasions clients look at the short term capital costs rather than the long term investment and benefits"*
- *"the planning process with the authorities is a lengthy procedure. In additon, ongoing requests for changes requested by the authorities impede the clients from developing proper design and shop drawings since plans change all the time"*

RESULTS – KEY THEMES

Design inter-relationships and stakeholder participation

- *"clients not able or not committed to understand the benefits of design for healthy environments"*
- *"lack of clear understanding by architects the sociological, psycological and physciatric determinants in building design "*
- *"health care professionals do not understand the importance of developing informants for the supply chain"*
- *"lack of dialogue, need for adequate codes"*

RESULTS – KEY THEMES

BIM Utilisation – Experiences

- *"improved performance in the supply chain for design and construction of buildings (data recording and handling, optimisation of resources, faster product delivery)"*
- *"health care professionals and end users are not called to participate and provide feedback and may be their participation is lacking at design brief stage"*
- *"IT personnel need training to translate user requirements within the design of buildings"*
- *"lack of compatible tools for design and product development"*
- *"very short pre construction programmes not permitting careful design development"*
- *"stakeholders and designers are engaged at late stages of design development, even after construction works are in advanced stages".*

DISCUSSION

BIM Utilisation - Challenges

- *Relationship between built environment and health – Need shift from hypothesis to real determinants.*
- *Methods to be continually tested along health care advancements*
- *Health care professionals are crucial interface to provide evidence based results that informs design development.*
- *Conducting evidence based stakeholder collaboration and monitoring of policies being implemented.*

CONCLUSION

Key informants in the design process – international developments

Collaboration and knowledge sharing – strategy / policy / implementation

Leadership

Role of stakeholders including academics and practitioners

End user requirements

Legislative Framework

Standards and Codes

Research

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