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About me:

I am an architect with an academic specialization on sustainability. Having worked as a professional architect for more than ten years, simultaneously progressed in the field of academia, I have finessed my knowledge as a combination of research and application on multiple fronts. My interest areas are sustainable design, energy efficiency, circular and bio-based construction and socio-ecological life cycle assessment of the built environment.

EDUCATION AND TRAINING

2010 – 2018

PH.D. IN BUILDING SCIENCE - "A LIFE CYCLE ASSESSMENT BASED DECISION SUPPORT TOOL FOR EARLY DESIGN PHASE OF MASS-HOUSING NEIGHBOURHOODS IN TURKEY" – Middle East Technical University, Department of Building Science

2006 – 2009

M.SC. IN BUILDING SCIENCE - "EXPLORING KNOWLEDGE MANAGEMENT IN THE PRACTICE OF ARCHITECTURE: A PILOT STUDY FROM TURKISH CAPITAL" – Middle East Technical University, Department of Building Science

2000 – 2005

BACHELOR OF ARCHITECTURE – Middle East Technical University, Department of Architecture

ACADEMIC EXPERIENCE

01/09/2020 – 30/11/2022

KU Leuven - Ghent Technology Campus, Belgium - Post Doctoral Researcher

- Research management of Interreg 2 Seas - [Circular Bio-based Construction Industry](#) project
- Directing Multi Stakeholder Project for Young Researchers on [Optimization of Built Environment in Urban Scale](#)
- Supporting impact assessment in the Erasmus+ Project - [Boosting Environmental and Social Topics \(BEST\)](#)
- Supervising researchers and doctoral (PhD) students and guiding Master's thesis students
- Conduction of the course on "Building Physics" for the International Master Programme in Civil Engineering.
- Social Impact Assessment lecture for the course on "Socio-ecological transformation of construction industry"

31/01/2020 – 01/09/2020

Middle East Technical University (METU) - Course Design and Part-time Instructor

- Responsible for design and lecturing for BS 722 "Life Cycle Assessment in Built Environment" with focal points of embodied carbon, building and urban scale applications and architectural decision-making.

31/07/2018 – CURRENT

METU - Beuth University of Applied Sciences - Summer School Coordinator

- Responsible for initiation of the Summer School on Energy Efficiency in Buildings between METU and Beuth University of Applied Sciences, Berlin and lecturing on "Life Cycle Assessment of Built Environment"

31/08/2016 – 30/04/2017

Çankaya University - Part-time Instructor

- Responsible for co-instructing "Integrated Building Design Studio" focusing on structural design, responsible for 30 students.

PUBLICATIONS

Social Impact Assessment of Circular Construction: Case of Living Lab Ghent

Sustainability - Circular Economy Strategies for Sustainable Development: Applications and Impacts

<https://doi.org/10.3390/su15010721> – 2023

This study proposes a social impact assessment framework for social impact assessment of a circular and bio-based housing prototype; Living Lab (LL) Ghent. Under 13 impact categories relevant to 4 stakeholder categories, circular and bio-based construction materials and methods were assessed for production and construction phases. Qualitative and quantitative data were collected through expert workshops and questionnaires. The results include identification of new indicators (urban mining, social economy, post-intervention manuals) for several circular construction elements. The social impacts of LL were discussed depending on each stakeholder category. It was also seen that there are several positive impacts related to workers and local community. Certain recommendations were also provided specifically on a construction sector basis which may be integrated into existing social impact assessment guidelines

Integrated Decision Support for Circular and Bio-Based Building Components

Journal of Building Engineering

<https://doi.org/10.1016/j.jobe.2022.105427> – 2022

This study provides decision support during early design phase of a demo terraced single family house; the living lab (LL) located in Ghent (Belgium) by utilizing circularity tools and life cycle assessment (LCA) methodology. For this purpose, nine preliminary designs (PD) for the building envelope were assessed in a comparative study, which consists of three basic construction methods: masonry, lightweight steel and wood framing construction supplemented with bio-based materials. Environmental impact assessment was supported with the circularity tools including the reuse and recyclability potential in the end-of-life scenarios (EoL). The results indicate that wood framing construction supplemented with bio-based materials performs environmentally better than the masonry or steel-construction based PDs. Moreover, the integration of LCA and circularity tools imply that bio-based methods have an increased performance with the avoided environmental impact through reuse and recycling. It is therefore concluded that long-term impact analysis on buildings should be improved with more precision in end-of-life scenario development.

Building tomorrow: 24 educational blue prints for circular constructions

Avans University of Applied Science

<https://doi.org/10.34894/XZXWVF> – 2022

Building tomorrow is the title of the book that is developed, as part of the EU-funded project Circular Bio-based Construction Industry (CBCI) in collaboration with KU Leuven, Avans University of Applied Sciences and HZ University of Applied Sciences. Building tomorrow offers lecturers of architecture and colleagues from related disciplines 24 turnkey teaching modules. Each module or so-called blueprint zooms in on a specific aspect of circular building with bio-based materials. All based on the latest scientific insights acquired during the CBCI project and abundantly illustrated with educational materials and analysis tools that will be accessible at no cost. The book includes a comprehensive glossary of key terms in bio-based and circular building

A Circular and Bio-based Renovation Strategy for Low-income Neighbourhoods

IOP Conf. Ser.: Earth Environ. Sci. 1078

<https://doi.org/10.1088/1755-1315/1078/1/012080> – 2022

This study combines the efforts of two initiatives, (1) Interreg Circular Bio-Based Construction Industry (CBCI) and (2) the innovative financial policy instrument of subsidy retention for low-income groups. By utilizing circular materials and methods, an urban renewal strategy for Flemish districts is proposed by using subsidy retention on macro-economic and social level. The scenario is envisaged as a collective approach with the local community in which the vulnerable users also benefit as direct participants to the research.

Application of circular technical services in a living lab in Ghent

CLIMA 2022 Conference Proceedings

<https://doi.org/10.34641/clima.2022.298> – 2022

This paper aims to provide a framework for assessment of circularity of technical services, specifically for a circular prototype. Despite the need for circular strategies in the construction sector, the existing assessment tools seldom focus on technical services due to a lack of appropriate design methods and increased investment costs of components suitable for reuse. The methodology includes an iterative process ensured by a design & build procurement and the solution for the integration of technical services was determined as a plug-in unit which is part of a modular CLT technical core. It is expected that the technical unit will continue its lifetime beyond the lifetime of LL Ghent.

Sustainability in Energy and Buildings 2021

https://link.springer.com/chapter/10.1007%2F978-981-16-6269-0_8 – 2021

In the search for circular construction methods a number of tools were analyzed in an iterative process during the design phase of a living lab (LL) in Technology Campus Gent, Belgium. In order to support the design process, an evaluation method is necessary to score the overall circularity. However, there is no standardized or well-established method to measure circularity. In this study, it is aimed to introduce a combination of existing tools on a case study. This approach should contribute to the creation of a holistic assessment of the circularity of the LL, which in turn will lead to buildings with circular material use by stimulating reuse and recycling of bio-based components.

Embodied Carbon Assessment of Residential Buildings at Urban-Scale

Renewable & Sustainable Energy Reviews, Vol. 117

<https://doi.org/10.1016/j.rser.2019.109470> – 2020

This study aims to develop a Life Cycle Assessment (LCA) framework for the embodied carbon assessment of the built environment at neighbourhood-scale. The study validates the results on three neighbourhood-scale mass housing projects in Ankara, Turkey. Embodied carbon assessment of these projects were conducted in order to generate a reference model of mass-housing projects. A data management framework for carbon assessment was also provided in the study.

Analysis of Embodied Carbon in Buildings Supported by a Data Validation System

In: Pomponi F., De Wolf C., Moncaster A. (eds) Embodied Carbon in Buildings. Springer, Cham

https://doi.org/10.1007/978-3-319-72796-7_7 – 2018

This study aims to develop a validation system to ensure the quality of data in carbon-related LCA studies. The framework introduces a hybrid life cycle methodology which is based on data quality. The use of the developed system has been demonstrated in an LCA analysis of an office building. The carbon footprint of the building components is calculated with an LCA software. As a final step, the results are compared with the impacts of a number of office buildings in the literature for validation purposes. The proposed framework suggests that data quality must explicitly be displayed and used as a guidance for impact assessment.

Exploring Knowledge Management in the Practice of Architecture

Journal of the Faculty of Architecture, Vol. 26 No. 2

<https://doi.org/10.4305/METU.JFA.2009.2.14> – 2009

The paper provides a pilot study in order to investigate the knowledge management issue in the practice of architecture. The study has been carried out in the Çankaya district of Ankara. Face-to-face interviews have been carried out with the head architects of 15 architectural offices. The subject domain is assumed to be experiencing the problems such as managing knowledge at a strategic level. This is due to the facts that the amount and importance of tacit knowledge is significant and communication of this knowledge to other parties is the responsibility of the architectural partners.

● CONFERENCES AND SEMINARS

International Conferences

- The concept of a data-driven platform for mitigating heat stress at the neighbourhood scale, PLEA2022 Sustainable Architecture and Urban Design, Santiago, 2022
- A Circular and Bio-based Renovation Strategy for Low-income Neighbourhoods, SBE22 Berlin - Sustainable Built Environment D-A-CH Conference, Berlin, 2022
- Social and Societal Impact Assessment of Circular and Bio-Based Construction, The 8th International Conference of S-LCA, Aachen, 2022
- Application of circular technical services in a living lab in Ghent & BIM-based circular building assessment and design for demountability, CLIMA 2022 The 14th REHVA HVAC World Congress, Rotterdam, 2022
- Vietnamese Energy Efficiency Week, Buildings & Cities: Race to Net-Zero, VSSE, Hanoi, 2021
- Environmental Life Cycle Assessment of Circular, Bio-Based and Industrialized Building Envelope Systems, ICBEST, Paris, 2021
- Evaluation of Circular Construction Works During Design Phase, SEB-21, Split Croatia, 2021
- Integrated Decision Support for Circular, Industrialised and Bio-based Construction Works, LCM 2021, Stuttgart, 2021
- Life Cycle Analysis of a Single-family House in Mediterranean, IPCMC, Istanbul, 2020
- nZEB from a life cycle perspective / International Virtual Forum on Zero Energy Buildings, Zerobuild, Turkey, 2020

- Nearly Zero Energy Buildings in Turkey / Energy Audit and Retrofit of Ministry of Environment and Urbanization Service Building, İstanbul Energy Forum, 2019
- Nearly Zero Energy Buildings in Europe and Studies in Turkey, FREM, İstanbul, 2018
- Building typologies and building stock in Turkey, Beyond All Limits, Ankara, 2018
- DAAD International Seminar - Powering the energy transition, "Poster, 2nd Prize", 2017
- Developing typical buildings and proposal of structure for building inventory in Turkey. International Symposium on Energy Efficiency in Buildings, Ankara, 2017
- A Life Cycle Assessment Based Decision Support Model for AEC Projects. SBE16 İstanbul - Smart Metropolises Congress, İstanbul, 2016
- International Union of Architects (UIA) İstanbul Congress, 2005

GRANTS

01/01/2023

VLAIO / Circular Economy - Living Labs

A circular economy living lab approach for a building block renovation concept was awarded for a grant of 1.000.000€ within the funding call of Flanders VLAIO institution. The grant application included several leading companies, research centers and universities in Flanders in a multi-stakeholder approach. The expected outcome is an action-research framework with an implementation of a case study in the city of Ghent.

31/12/2020 – 30/08/2022

VLIR-UOS / Global Minds - Multi Stakeholder Grants for Young Researchers

A multi stakeholder project grant of 20.000€ for the title 'Optimization of Built Environment in Neighbourhood Scale' with HUCE in Vietnam, through the Global Minds Multi Stake-holders Grant for Young Researchers call from VLIR-UOS framework that focuses on the development-relevant research in cooperation. The expected output is a draft for a digital tool that enables combining different layers of data (thermal comfort, geolocation and expert opinions) for supporting design process for practitioners and local authorities.

<https://iiv.kuleuven.be/onderzoek/building-physics-and-sustainable-design/research/research-projects-map/optimization-of-built-environment-in-neighbourhood-scale>

WORK EXPERIENCE

04/2017 – 29/09/2020 – Ankara, Turkey

PROJECT COORDINATOR – DEUTSCHE GESELLSCHAFT FÜR INTERNATIONALE ZUSAMMENARBEIT (GIZ) TURKEY - ENERGY & CLIMATE PROJECTS

- Responsible for realizing several project activities in 'Energy Efficiency in Public Buildings in Turkey' commissioned by DKTİ:
- Building energy audits and retrofits, solar PV implementations, energy management systems, nZEB roadmap, development of master programme on energy efficiency
- Providing technical backstopping on quality of outputs such as reports, factsheets, etc.
- Leading communication with several stakeholders such as ministries and chambers
- Mediating between local and international partners in problem solving
- Technical and organizational support for relevant study tours with project stakeholders

Website www.ee-turkey.org

01/2016 – 04/2017 – Ankara, Turkey

LOCAL EXPERT - BUILDING SERVICES – NIRAS INTERNATIONAL CONSULTING, "TECHNICAL ASSISTANCE FOR IMPROVING ENERGY EFFICIENCY IN BUILDINGS"

- Responsible for project deliverables such as building typology, building database, energy saving potential, feasibility studies and dissemination activities (architectural student competition)
- Lead expert for determining building typologies which characterizes building envelope, technical systems and energy consumption in different climate zones in Turkey
- Lead expert and jury member for architectural student competition on energy efficiency
- Supportive expert for estimating energy saving potential in different climate zones

Website www.niras.com

07/2013 – 08/2016 – Ankara, Turkey

TEAM CAPTAIN – MTK ARCHITECTS & CONSULTANTS

- Responsible for design and implementation of health-care facilities in Turkey and Middle East

Website <http://www.mtkarchitects.com/>

02/2012 – 06/2013 – Ankara, Turkey

TEAM CAPTAIN – ERBUĞ ARCHITECTS

- Responsible for design and implementation phases of educational campuses and office buildings

Website <http://erbugmimarlik.com/>

11/2011 – 09/2013 – Ankara & Antakya, Turkey

DESIGN PARTNER – ATÖLYE4 ARCHITECTS

- Responsible for design and implementation phases of Hatay Provincial Directorate of Administration Office Building

09/2011 – 01/2012 – Ankara, Turkey

ARCHITECT – EKODENGE ARCHITECTURE

- Responsible for preliminary design works focused on environmental design, participation in UNDP Promoting Energy Efficiency in Buildings

11/2009 – 09/2011 – Ankara, Turkey

BUILDING INSPECTOR – DIRECTORATE GENERAL OF FOUNDATIONS OF TURKEY REPUBLIC

07/2006 – 10/2009

ARCHITECT – PART-TIME PROJECT WORKS / FREELANCING ARCHITECT

● **REPORTS**

Energy Audits

- Detailed Energy Audit of Ministry of Environment and Urbanization Service Building. DKTI - Energy Efficiency in Public Buildings, 2018
- Detailed Energy Audit of a Secondary School in Kırıkkale, Turkey. DKTI - Energy Efficiency in Public Buildings, 2017
- Feasibility Studies with Alternative Refurbishment Plans of Pilot Residential and Office Buildings in Adana, Ankara, Erzurum, Samsun, IPA Technical Assistance For Improving Energy Efficiency in Buildings, 2016

Regulatory Proposals

- nZEB Roadmap for Turkey. DKTI - Energy Efficiency in Public Buildings, 2020
- nZEB Feasibility Report for Turkey. DKTI - Energy Efficiency in Public Buildings, 2019
- Developing Typical Buildings and Proposal of Structure for Building Inventory in Turkey. IPA Technical Assistance For Improving Energy Efficiency in Buildings, 2016
- Recommendations on Climatic Data for BEP-TR calculations. IPA Technical Assistance For Improving Energy Efficiency in Buildings, 2016

Academic Proposals

- Guidelines for teaching on circular and bio-based materials 'Building Tomorrow: 24 educational blueprints for circular construction', CBCI Project in cooperation with KU Leuven & Avans Applied Sciences, 2022
- Report on Master Programme Development on Energy Efficiency. DKTI - Energy Efficiency in Public Buildings, 2019

Project Reports

- Life Cycle Analysis Scenarios: focus on embodied impacts of nine preliminary design options for supporting the decision making on design phase of Living Lab Ghent in scope of the CBCI Project
- Description of circular and bio-based solutions: focus on multi-criteria assessment of nine preliminary design options for design phase of Living Lab Ghent in scope of CBCI Project
- Social and societal impact assessment: focus on assessment of circular and bio-based buildings specifically for Living Lab Ghent
- Evaluation Report: focus on evaluation of processes for realizing Living Lab Ghent via tools such as process-mapping, theory of change and logbooks.

ARCHITECTURAL PROJECTS

Health-care Facilities

- Kocaeli State Hospital, Turkey, 2016
- Adana Rehabilitation Hospital, Turkey, 2015
- Kalar Pediatric Hospital, Iraq, 2014

Office Buildings

- Dohuk Security Directorate, Iraq, 2014
- Şişecam Glass Factory Office Building, Turkey, 2013

Competition Projects

- **Sağlık Çalışanlarına Şükran ve Anma Memorial for Health Workers Project Competition (2021) - Finalist**
- Çamlık Social Habitat National Architectural Project Competition (2014)
- Atatepe Social Centre and Landscape National Architectural Project Competition (2014)
- LSV Çerkeş Natural Life Center National Concept Design Competition (2013)
- M.E.B Educational Campuses National Architectural Project Competition, Mardin (2013)
- **International Expo 2016 Antalya Concept Design Project (2013) - First Prize**
- Mersin Chamber of Commerce and Industry Office Building and Business Centre National Concept Design Competition (2012)
- Çeşme Central Beach Public Spaces and Facade Arrangement National Concept Design Competition (2012)
- Open International Urban Design Competition for Klaksvík City Center (2012)
- **Bursa Orhangazi Centre Urban Design Competition (2012) - 4th Mention Prize**
- **T.C. Hatay Provincial Directorate of Administration Office Building National Architectural Competition (2011) - First Prize**
- Manisa Municipality Office Building National Architectural Project Competition (2011)
- International Competition "Urban Interaction Areas In 2023: Public Squares" (2010)

HONOURS AND AWARDS

Honours and awards

- International Expo 2016 Antalya Concept Design Project – 1st Prize, 2013
- Educational Campuses Architectural Project Competition, Mardin – Honourable Mention, 2013
- Bursa Orhangazi Centre Urban Design Competition – 4th Mention Prize, 2012
- T.C. Hatay Provincial Directorate of Administration Office Building National Architectural Competition – 1st Prize, 2011

NETWORKS AND MEMBERSHIPS

CURRENT

Chamber of Architects

Turkey

CERTIFICATIONS

Competitive Horizon Europe Proposal Writing, KU Leuven, 2021

Coaching skills for Post Docs, KU Leuven, 2020

A local, regional and national heating and cooling toolbox - Hotmaps, 2020

Higher Education Approaches and Scientific Cooperation, GIZ, 2018

Capacity Works Certificate, GIZ, 2018

Implementing the Energy Performance of Buildings Directive, EuroAcad, 2017

Life Cycle Assessment with SimaPro, Metsims, 2015

LANGUAGE SKILLS

Mother tongue(s): **TURKISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C1	C2	C1	C2
SPANISH	A1	A2	A1	A1	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

ORGANISATIONAL SKILLS

Leadership

- Leadership gained through acting as the technical expert in international projects (of more than 5) / as a team captain in architectural projects (of a team of 5), as an instructor and organizer in courses and summer schools (more than 15 students), as post-doc researcher for coaching researchers and graduate students

Coordination

- Coordinator with experience more than 10 years for architectural projects
- Coordinator with experience more than 5 years for international research projects

Organization

- Organizing and guiding technical groups in study tours, academic guidance and organization in international summer schools

Knowledge Management

- Planning structures for organizations through technical knowledge

● COMMUNICATION AND INTERPERSONAL SKILLS

Intercultural communication

- Working for international consultancy companies enhances my ability to comprehend the needs of experts, stakeholders, students and colleagues
- Working in international academic institutions broaden my scope on educational activities and communication with industry, academia and pupils.

Coordination / teamwork

- Through my education as an architect, I consider it easy to coordinate several groups of people and experts. It is often my responsibility to collect information from different parties and formulate a solution

Mediating skills

- Working as a contact person for architectural projects, or acting as a mediator between public institutions and consultancy companies, I deal with problem solving which are mainly related with lack of communication

Presentation skills

- Having participated in several national / international conferences, project presentations and events

● JOB-RELATED SKILLS

Technical Scope

- Expertise on environmental life cycle assessment of built environment
- Experience on social life cycle assessment of built environment
- Excellent knowledge on building energy systems
- Good command of several layers of urban scale built environment
- Good command of energy simulation programs

● DIGITAL SKILLS

My Digital Skills

Microsoft Office | High ability to use AutoCAD | Adobe Photoshop | Sketch-Up | BIM Revit Architecture | V-Ray | Business Process Modelling Notation (BPMN)

● OTHER SKILLS

Hand drawing & Digital illustration

Sports

● DRIVING LICENCE

Driving Licence: B

● RECOMMENDATIONS

- Available upon request