

# TWR CONFERENCE

Transdisciplinary Workplace  
Research

4<sup>th</sup>-7<sup>th</sup> September 2024

Edinburgh Napier University



# **LOCAL ORGANISING COMMITTEE**

## **Dr Andrew Smith**

School of Computing, Engineering and the Built Environment, Real Estate and Facilities Management, Edinburgh Napier University

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**EVENT ORGANISED BY**

**TWR  
NETWORK**

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School of Computing,  
Engineering & the  
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## **TWR Conference 2024 Website and Proceedings**

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# PROGRAMME OVERVIEW

## DAY 1: WEDNESDAY, 04/09/2024

09:30 – 17:30	Registration and Workshops
09:30 – 11:30	TWR board meeting (board members only) / Registration and Networking
11:30 – 13:00	Craiglockhart campus tour
13:00 – 14:00	Lunch
14:00 – 15:00	Workshop 1 – Using VR to Assess Cognitive Flexibility and Creativity in the Workplace ( <i>Iyad Sawaftah &amp; Suha Jaradat, Centre for Mind, Creativity and Environment Research, CEDAR</i> )
15:00 – 16:00	Workshop 3 – Digital FM and Skills ( <i>Gordon Mitchell, WHOLUS</i> )
16:00 – 16:30	Coffee Break
16:30 – 17:30	Workshop 2 – FM Role in Sustainability ( <i>Dave Nolan, International Fund for Agricultural Development, UN</i> )

# DAY 2: THURSDAY, 05/09/2024

09:00 – 09:30

Welcome

Room Lindsay Stewart Lecture Theatre

09:30 – 10:30

Opening Keynote by Prof. Matt Tucker

Room Lindsay Stewart Lecture Theatre

10:30 – 11:00

Break

11:00 – 12:30

Session 1

**Session 1A (Room 2/10)**  
**Workplace Sense of Belonging and Satisfaction**

**Session 1B (Room 2/04)**  
**Architecture and Interior Design**

**Session 1C (Room 3/03)**  
**Digitalisation**

11:00 – 11:15

What affects sustainable coworking? A psychological ownership perspective

*Daniel Magnusson, Nika Dastoornikoo, Hendry Raharjo and Petra Bosch-Sijtsema*

Exploring the Link Between Office Workstation Design and Physiological Stress: - A PRISMA Systematic Review

*Sophie Schuller, Lisanne Bergefurt, Rianne Appel-Meulenbroek and Yvonne de Kort*

The Influence of Video Communication on the Informal Interactions Between Dispersed Workers: The Role of Space

*Maria Tam, Birgitta Gaterleben and Clara Weber*

11:15 – 11:30

“Where’s my desk?”: A longitudinal investigation on personalization and psychological ownership at the workplace

*Maria Gaudiino, Anja Van den Broeck, Marijke Verbruggen, Leon De Beer and Leoni Van der Vaart*

Knowledge Management between Service Design and Architectural Design in Workplace Development

*Valeria Gryada, Eevi Juuti, Aulikki Herneoja and Emilia Rönkkö*

Revolutionising Sustainable Facility Management Outsourcing through the United Nations’ SDGs: AI Applications and Case Studies

*Ka Leung Lok, Albert So, Andrew Smith, Alex Opoku and Victoria Maame Afriye Kumah*

11:30 – 11:45

How do workplace features at the office and at home determine workplace choice during a flexible workday?

*Deniz Tutzcuoglu, Rianne Appel Meulenbroek, Aloys Borgers, Theo Arentze and Asli Sungur*

Exploring the Decision-making of IAQ Interventions in post-covid Australia

*Yan Zhang, Felix Kin Peng Hui, Colin Duffield and Caroline X Gao*

Spatial Design in Virtual Reality Workspaces: A Paradigm for Future Remote Work Environments

*Kyunghyun Cho, Hyun Woo Kim, Yujeung Eum and Seung Hyun Cha*

11:45 – 12:00

How office workers adapt their workplace – a social practice perspective

*Mary Kaaria, John Connaughton and Laura Maffei*

Burnout in Context: Studying Real World Workplaces

*Sally Augustin, Cynthia Milota and Deborah Bucci*

Human occupation and behaviours VS environmental sustainability. An innovative calculation model to measure their effects in office buildings

*Alice Paola Pomè, Chiara Tagliaro and Gianandrea Ciarabella*

12:00 – 12:30

Q&A and Open Discussion

Q&A and Open Discussion

Q&A and Open Discussion

12:30 – 13:30

Lunch Break

# DAY 2: THURSDAY, 05/09/2024

13:30 – 15:00

## Session 2

### Session 2A (Room 2/10) Workplace Wellbeing and Effectiveness

### Session 2B (Room 2/04) Educational Workspaces

### Session 2C (Room 3/03) Activity based working: theory & practice

13:30 – 13:45

Evaluating mental health in the workplace; Crafting an 18-item mental health scale for knowledge workers

*Lisanne Bergefurt, Rianne Appel-Meulenbroek and Theo Arentze*

Shared Use of Academic Workspaces

*Jenni Poutanen and Suvi Nenonen*

Satisfaction Assessment of ABW work settings

*Eunji Haene, Lukas Windlinger, Carla Iurilli and Virna Monero*

13:45 – 14:00

Setting boundaries: Maintaining a healthy work-life balance for teleworkers in South Africa

*Thabelo Ramantswana*

Transforming workspaces: A topological perspective on multi-Location work

*Alessandra Migliore and Alfons van Marrewijk*

Assessing the Activity Based Workplace (ABW) concept based on different work collocated business units

*Amila Badungodage, Milica Muminovic and Charles Lemckert*

14:00 – 14:15

Stakeholders' perspectives on WELL Building Standard adoption within the APAC region: barriers and opportunities

*Cida Ghosn, Christhina Candido and Georgia Warren-Myers*

Never two without three – sustainable university campus management

*Satu Kankaala and Suvi Nenonen*

What We Know and What We Should Know About Activity-Based Work Environment Consequences: A Meta-Analysis

*Ann Sophie Lauterbach*

14:15 – 14:30

Workspace impacts and the moderating effect of job category on innovative team

*Hélène Sicotte, Hélène Delerue and Andrée De Serres*

Campus Crossroads: Insights into High School and University Resource Sharing

*Vera Amanda Luostarinen, Tuuli Jylhä, Suvi Nenonen, Eveliina Hietakymi, Niclas Sandström and Chuyao Wang*

Spatial indicators for systematic description of Activity Based Working and multi-space office environments

*Carla Iurilli, Lukas Windlinger, Eunji Häne and Virna Monero*

14:30 – 15:00

Q&A and Open Discussion

Q&A and Open Discussion

Q&A and Open Discussion

15:00 – 15:30

Break

# DAY 2: THURSDAY, 05/09/2024

15:30 – 16:30

## Session 3 (Abstract only)

### Session 3A (Room 2/10) Digital tools for research and practice

### Session 3B (Room 2/04) Inclusion and Diversity

### Session 3C (Room 3/03) Workplace Engagement and Culture

15:30 – 15:35

Digital Workspaces through the Lens of Digital Autoethnography

*Marko Orel*

A Guideline Review on Physical Workplace Accommodations for Neurodivergent Office Workers

*Clara Weber, Eunji Häne, Joanna Yarker, Rachel Lewis, Fehmidah Munir, Theresa Wheele, Selina Capol and Beate Krieger*

Co-working as a potential solution for remote working challenges

*Aino Ruohola, Sirpa Nieminen and Saija Toivonen*

15:35 – 15:40

How the nature of work is associated with ICT demands and resources? A comparison of the hybrid and high-intensity teleworkers

*Kaire Piirsalu-Kivihall and Jaana-Piia Mäkinieni*

Neuro-management Approaches to Mitigating Workplace Incivility: Unveiling Influential Factors Shaping Passive Resistance Responses among Indian Mid- and Senior-Level Managers

*Ayatakshee Sarkar*

When your office fits your activity: office-activity (mis)fit, culture strength and job satisfaction

*Alessandra Migliore, Chiara Tagliaro and Alice Paola Pomé*

15:40 – 15:45

Virtual Reality at Workplace: Increasing Engagement in Agile Retrospectives

*Veronika Šlapáková Losová, Marko Orel and Michal Hron*

Physical workplace adjustments to support neurodivergent workers: A systematic review

*Clara Weber, Beate Krieger, Eunji Häne, Joanna Yarker and Almuth McDowall*

How can we attract employees back to the office? A survey study on office attendance in post-pandemic Australia

*Yan Zhang, Felix Kin Peng Hui, Colin Duffield and Caroline X Gao*

15:45 – 15:50

Using serious gaming as a method for exploring behaviour and attitudes in the work environment

*Henk-Jan Hoekjen, Maaikje Nickel, Anca Gosselink and Jacqueline Schlangen*

The Role of Psychological Privacy in the Office Environment: Interactions between Psychosocial and Environmental Resources and Demands

*Clara Weber and Joanna Yarker*

15:50 – 15:55

Exploring the circular futures of workspaces through back casting

*Rebecka Lundgren, Riikka Kyrö, Saija Toivonen, Lassi Tähtinen*

Campus NL: hybrid working in the university environment in the Netherlands

*Chiara Pelosi, Alexandra den Heijer, Jasmine Bacani, Monique Arkesteijn*

Co-working spaces in Poland: Location factors and geographical distribution

*Karolina Kapustka*

15:55 – 16:00

Investigating the synergy between participatory design and placemaking to foster community-driven work environments

*Anna Conserva and Bert Smit*

The Impact of Sensory Processing on Office Workers' Well-being, Burnout Symptoms, and Satisfaction in Diverse Office Environments

*Clara Weber and Joanna Yarker*

Working in open spaces, in coworking contexts: observations and impacts on coworkers

*Diane-Gabrielle Tremblay*

16:00 – 16:30

Q&A and Open Discussion

Q&A and Open Discussion

Q&A and Open Discussion

19:00 – 23:00

Conference Dinner

# DAY 3: Friday, 06/09/2024

09:00 – 10:30			
Session 4			
	Session 4A (Room 2/10) Indoor Environmental Quality, IEQ 1	Session 4B (Room 2/04) Research and Learning Spaces	Session 4C (Room 3/03) Workplace Preferences
09:00 – 09:15	IEQ in the context of activity-based working: Using a zone-specific post-occupancy evaluation to create a supportive working environment  <i>Robin Ganninger and Torben Bernhold</i>	A field study of the space-efficiency in office arrangement of a research organisation  <i>Rostislav Kouznetsov and Mikhail Sofiev</i>	SIM-OFFICE – A Gamified Research Tool for Workplace Exploration - Purposes, App Structure and Initial Data Analysis  <i>Annette Kämpf-Dern</i>
09:15 – 09:30	Towards environmental analysis for indoor office spaces. Interdisciplinary approach to quantified photo analysis  <i>Aulikki Herneoja, Emilia Rönkkö, Anu Haapakangas and Simo Hosio</i>	The relevance of bricks and clicks. Research insights on relevant strategies in context of informal learning spaces at universities  <i>Katja Ninnemann, Susanne Geister and Jennifer Schneidt</i>	Appraising the Influence of Individual Workspace Preferences on the Perceived Productivity and Wellbeing of Employees: A Scoping Review  <i>Mosa Mpho Ramohloloane, Bankole Awuzie and Thabelo Ramantswana</i>
09:30 – 09:45	Acoustic Privacy, Personality Traits and Burnout - Potential Insight into Office Working Preferences in the UK  <i>Paige Hodsman</i>	Design for Sustainable Outsourcing Strategies of Facilities Management Outsourcing Services: An Investigation In Educational Facilities  <i>Ka Leung Lok, John Fai Yip Yeung, Andrew Smith, Alex Opoku and Victoria Maame Afriyie Kumah</i>	Identification of employee workplace choice determinants– A Best-Worst scaling study  <i>Kyra Voll, Martin Christian Höcker, Yassien Bachtal and Andreas Pfnür</i>
09:45 – 10:00	Lighting control for hybrid work offices  <i>Kiia Aurora Einola, Henri Juslén and Negin Karimi</i>	An international review of building standards and guidelines on thermal comfort and ventilation for School buildings  <i>Natalie Reguis and Andrew Smith</i>	The infrastructure of hybrid work environments - A comparison of different spatial offers  <i>Lisa Thrainer and Alexander Redlein</i>
10:00 – 10:30	Q&A and Open Discussion	Q&A and Open Discussion	Q&A and Open Discussion
<b>10:30 – 11:00</b>			
<b>Break</b>			



# DAY 3: Friday, 06/09/2024

11:00 – 12:30			
Session 5			
	Session 5A (Room 2/10) The Evolving Workplace	Session 5B (Room 2/04) Learning and Education	Session 5C (Room 3/03) Corporate Real Estate
11:00 – 11:15	A review of factors influencing employees' experience of occupancy in the office  <i>Gijs Brouwers, Maaike Niekel, Monique Arkesteijn, Susanne Colenberg and Henk-Jan Hoekjen</i>	Exploring Out-of-Classroom Activities for Students with Disabilities: Implications for Employability Skills Development  <i>Tatiana Tungli and Debbie Meharg</i>	Enhancing Agility in Corporate Real Estate: Development of an Occupancy Simulation Model for Space Optimization and Decision-making  <i>Ricardo Chacon Vega, Yaoyi Zhou and Eunhwa Yang</i>
11:15 – 11:30	The enticing workplace: Attracting people back the office  <i>Nigel Oseland and Gary Raw</i>	Places for learning – the changing needs of the students on university campus  <i>Kirsi Mäenpää and Suvi Nenonen</i>	Integrating Organizational Culture, Organizational Structure, and Office Layout: A Systematic Review of the Literature.  <i>Borja Ruiz de Castañeda, Rianne Appel-Meulenbroek and Samuel Azasu</i>
11:30 – 11:45	Social affordances of communal office spaces: a visual analysis  <i>Susanne Colenberg</i>	The relevance of learning space organisation. Insights from a real-world laboratory for hybrid and student-centred teaching and learning  <i>Katja Ninnemann, Jona Piehl and Pelin Celik</i>	Sustainability-oriented Employer Branding: Identifying Real Estate-Related Requirements of Employees  <i>Maria Günther, Martin Christian Höcker and Andreas Pfnür</i>
11:45 – 12:00	Creative Informatics: how data driven innovation has transformed the creative workplace  <i>Inge Panneels and Holly Patrick</i>	Learning and working environments – co-creation methods and tools in use  <i>Suvi Nenonen, Maikki Sykäre, Inka Sankari and Niclas Sandström</i>	Return to Office: The importance of the physical workplace and organisational culture  <i>Martin Christian Höcker, Kyra Voll, Yassien Bachtal and Andreas Pfnür</i>
12:00 – 12:30	Q&A and Open Discussion	Q&A and Open Discussion	Q&A and Open Discussion
<b>12:30 – 13:30</b>			
<b>Lunch Break</b>			

# DAY 3: Friday, 06/09/2024

13:30 – 15:00

## Session 6

### Session 6A (Room 2/10) Indoor Environmental Quality, IEQ 2

### Session 6B (Room 2/04) Hybrid Working 1

### Session 6C (Room 3/03) Workplace Culture and experience

13:30 – 13:45

Influence of Room Color Tone and Brightness on Interpersonal Dynamics in Virtual Workplace Environments

*Yujeung Eum, Kyunghyun Cho and Seung Hyun Cha*

The hybrid-work office: Exploring the changing knowledge-work office in a living lab

*Mathilda du Preez, Dennis La Brijn, Maaike Nielke and Monique Arkesteijn*

Cultural probes for job crafting – The use of cultural probes in the context of hybrid work arrangements

*Talvikki Kollmann*

13:45 – 14:00

Sounds of silence: Rhythm analysis of noise in flexible workspaces

*Marie Hasbi and Alfons van Marrewijk*

Are perceptions of the office environment and teleworking related to team climate at hybrid workplaces? A cross-sectional study

*Annu Haapakangas, Sivi Hirvonen, Jaakko Airaksinen, Elna Tulenheimo-Eklund and Virpi Ruohomäki*

Navigating gender and control in organizational spaces: The role of office design

*Alessandra Migliore, Chiara Tagliaro and Cristina Rossi-Lamastra*

14:00 – 14:15

Lights, Noise, Temperature... Socialize! A Psychological Investigation into Employees' Workspace Environment Satisfaction and their Motivation to Socialize

*Jennifer Erickson and Spencer Garcia*

What determines the differences between Dutch hybrid workers' location choice clusters?

*Sjors Houtveen, Dennis La Brijn, Anca Gosselink and Rianne Appel-Meulenbroek*

Exploring the effectiveness of design features to incite positive feelings and desired experiences in workplaces.

*Laurie Aznavoorian, Christhina Candido and Djordje Stojanovic*

14:15 – 14:30

Transforming acoustic environments: A comparative pre-post analysis of acoustic comfort and noise disturbance in three renovated offices based on the ISO 22955:2021

*Pascal van Dort*

Topologies of workplaces?! What can we learn from spatial sociology about hybrid workspaces?

*Mascha Will-Zocholl*

The allure of the office environment - Qualitative research among Hungarian office workers

*Fruzsina Pataki-Bitto*

14:30 – 15:00

Q&A and Open Discussion

Q&A and Open Discussion

Q&A and Open Discussion

15:00 – 15:30

Break

# DAY 3: Friday, 06/09/2024

15:30 – 17:00

## Session 7

### Session 7A (Room 2/10) Human Centred Workplace

### Session 7B (Room 2/04) Hybrid Working 2

15:30 – 15:45

Making room for autism at work: Designing a participatory research project

*Andrea Jelic, Phuong Nguyen, Jasmien Kinnaer, Maria Lackovicova, Dirk Saelens and Ann Heylighen*

Navigating the Hybrid Work Landscape: Unveiling Perspectives of the Aging Workforce through Persona and Thematic Analysis

*Ibrahim Bilau, Eunhwa Yang, Leandro Tonetto, Marwan Shagar and Abdurrahman Baru*

15:45 – 16:00

From Space Construction to Mental Construction - How Constructivist Thinking Can Provide a Fresh View on the Importance of User Involvement for Workplace Project Success

*Christian Stumpf and Annette Kämpf-Dern*

Team rules matter: Workplace preferences for team-based knowledge work in hybrid settings

*Katja Ninnemann, Jennifer Schneidt, Christian Dehmel and Tobias Ringeisen*

16:00 – 16:15

Q&A and Open Discussion

How different workplace settings at the office and at home support work activities, task profiles and productivity

*Peter-Friso van den Boogert, Rianne Appel-Meulenbroek, Lisanne Bergefurt and Astrid Kemperman*

16:15 – 16:45

Q&A and Open Discussion

Q&A and Open Discussion

16:45 – 17:15

Conference Closing

# Scientific Committee

First name	Surname	Institution
Amar	Johari H. N.	Bond University Australia
Armitage	Lynne	Bond University Australia
Badungodage	Amila	University of Canberra
Baykal Uluoz	Ebru	Istanbul technical University
Bergefurt	Lisanne	Eindhoven University of Technology
Bernhold	Torben	FH Münster
Bosch	Petra	Chalmers University of Technology
Bros Williamson	Julio	The University of Edinburgh
Brouwers	Gijs	Delft University of Technology (TU Delft)
Camocini	Barbara	Politecnico di Milano
Clements-Croome	Derek	University of Reading
Colenberg	Susanne	Delft University of Technology (TU Delft)
Daglio	Laura	Politecnico di Milano
Deakin	Mark	Edinburgh Napier University
Demazière	Christophe	Université de Tours
Durakovic	Iva	The University of New South Wales (UNSW Sydney)
Feiten Haubrich	Gislene	CITCEM
Gullace	Maria Teresa	Politecnico di Milano
Smith	Andrew	Edinburgh Napier University
Günther	Maria	t-online
Haner	Udo-Ernst	Fraunhofer IAO
Herneoja	Aulikki	University of Oulu, Finland
Heywood	Christopher	The University of Melbourne
Höcker	Martin Christian	Technische Univeritat (TU) Darmstadt
Hoekjen	Henk-Jan	Delft University of Technology (TU Delft)
Ikediashi	Isaac (Dubem)	Edinburgh Napier University
Inalhan	Goksenin	Istanbul Technical University
Iurilli	Carla	Zurich University of Applied Sciences (ZHAW)
Jelic	Andrea	KU Leuven, Belgium
Jensen	Per Anker	Technical University of Denmark
Jin	Quan	Chalmers University of Technology
Jowkar	Mina	Edinburgh Napier University
Krizmanic	Vesna	Faculty of Architecture, University of Belgrade
Kyrö	Riikka	Lund University
Lauterbach	Ann Sophie	University of Konstanz
Lavy	Sarel	Texas A&M University
Lok	Ka Leung	University of South Wales
Magnusson	Daniel	Chalmers University of Technology, Sweden
Manzini Ceinar	Irene	University College London

# Scientific Committee

<b>First name</b>	<b>Surname</b>	<b>Institution</b>
Markkanen	Piia	University of Oulu, Finland
Migliore	Alessandra	Politecnico di Milano
Moobela	Cletus	Edinburgh Napier University
Nenonen	Suvi	University of Helsinki
Olawumi	Timothy	Edinburgh Napier University
Orel	Marko	Prague University of Economics and Business
Osunsanmi	Temidayo	Edinburgh Napier University
Pataki-Bitto	Fruzsina	Budapest University of Technology and Economics
Piirsalu-Kivihall	Kaire	Tartu University of Applied Sciences
Pomè	Alice Paola	Politecnico di Milano
Poutanen	Jenni	Tampere University
Raharjo	Hendry	Chalmers University of Technology
Ramantswana	Thabelo	University of Witwatersrand
Reid	Alasdair	Edinburgh Napier University
Riratanaphong	Chaiwat	Thammasat University
Stefanova	Albena	University of National and World Economy
Thrainer	Lisa	Technische Universität Wien
Toivonen	Saija	Aalto University
Wilson	Hannah	Liverpool John Moores University
Yang	Eunhwa	Georgia Institute of Technology
Zabunov	Georgi	University of National and World Economy – Sofia