# Spatial challenges of hybrid work

## An exploration of Dutch university campuses

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# Spatial challenges of hybrid work: an exploration of Dutch university campuses

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## Abstract

**Purpose** – The shift to hybrid work, broadly defined as the transition between traditional and non-traditional work modes enabled by digital technologies, has profoundly impacted university campuses, which function both as educational institutions and major employment centres. Despite their significance, adapting hybrid work models within universities remains under-explored in academic research. This study aims to investigate how university real estate support teams perceive challenges stemming from the adoption of hybrid work.

**Design/methodology/approach** – Through thematic content analysis, a narrative review of 27 studies identified three dimensions of challenges: spatial challenges in campus planning from a real estate perspective, psychosocial challenges for employees and organisational challenges shaping spatial strategies. In total, 12 higher-level spatial challenges were identified and discussed in a Delphi workshop involving representatives from 12 of the 14 Dutch universities. Group discussions revealed three additional challenges not identified in the literature review.

**Findings** – Through three rounds of prioritisation, the five most critical challenges emerged: preventing resistance to changes, balancing employee autonomy and control, supporting individual and group needs, accommodating diverse work types and individual preferences and managing underutilised space without overcrowding.

**Practical implications** – Co-creating university spaces between real estate teams and campus employees, coupled with extended change management periods, seems crucial for stakeholder engagement and successful transitions. These findings highlight an urgent need for targeted research and context-specific strategies to navigate hybrid work within university frameworks.

**Originality/value** – This paper's originality lies in addressing the often-overlooked influence of hybrid work on university staff within campus spatial planning. It identifies the most critical challenges in spatial planning in implementing hybrid work in university campus settings.

**Keywords** Hybrid work, University campus management, Spatial management, Facilities management, Delphi method, Universities

**Paper type** Research paper



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## 1. Introduction

Existing research on hybrid working at universities primarily focuses on hybrid learning and teaching (e.g. Ninneman *et al.*, 2020; Singh *et al.*, 2021) and their spatial requirements (e.g. Khamitova and Rojas-Solórzano, 2023; Kohls *et al.*, 2022). However, universities are also major employers (Den Heijer, 2011, 2021), employing over 61,000 people (Universiteiten van Nederlands, 2025). Research on hybrid work has increased since global lockdowns, especially in office real estate management and spatial design (Carrasco-Garrido *et al.*, 2023). However, most studies focus on commercial offices, examining activity-based office design (e.g. Oygür *et al.*, 2022), preferences for remote or in-office work (Appel-Meulenbroek *et al.*, 2022; Rahaman *et al.*, 2020) and design of remote workspaces like co-working spaces (Pan *et al.*, 2024) or home offices (Bergefurt *et al.*, 2023). University campuses, however, present unique real estate challenges (Den Heijer, 2011, 2021). They host diverse work activities, worker types and institutional cultures. Also, faculty members influence organisational initiatives, unlike the top-down approach typical of non-academic commercial organisations (Martin and Edwards, 2016). Decentralised structures and competing interests complicate centralised real estate strategies (Rymarzak *et al.*, 2019).

Studies addressing hybrid work among university staff primarily examine micro-scale interventions rather than campus-wide issues, such as redesigning specific office floors for hybrid work (Aksamija and Milosevic, 2023; Lahti and Nenonen, 2021), hybrid office use by subgroups (e.g. doctoral students; Adikesavan and Ramasubramanian, 2023) or how office design influences individual location preferences (Migliore *et al.*, 2024a). Campus-scale studies typically address energy optimisation (Mosteiro-Romero *et al.*, 2023), external hubs (Migliore *et al.*, 2024b) or insights from interviews with a few experts (Nenonen and Danivska, 2021), but do not explore specific campus-wide challenges for supporting hybrid working with the real estate settings of the campus.

This study, therefore, identifies key spatial challenges in implementing hybrid work on Dutch university campuses as part of a larger research project (Campus NL). Combining a literature review with a Delphi-method workshop involving campus real estate and facilities management representatives, the study provides an overview of spatial challenges, integrating psychological and organisational factors as well. Findings offer guidelines for hybrid working policies tailored to university campuses.

### *1.1 Academic hybrid work*

The term "hybrid work" originated in 1994 in the US National Research Council (1994), describing satellite offices, rural telework centres and hybrid sites between the home and the central office. Hybrid working integrates remote and in-person work (Krajcik *et al.*, 2023), offering flexibility to work from offices or remote locations, such as homes, coworking spaces or cafes, with or without information and communication technologies. Gratton (2021) also notes a shift along the time axis, with many workers moving from being time-constrained (working synchronously) to being time-unconstrained. Sailer *et al.* (2023) further expanded the definition, viewing hybrid work as a tool for investing in employees with a "socio-spatial" lens of hybrid work to deliver positive organisational outcomes such as engagement, reduced attrition and productivity. The concept now includes where work is done and its psychosocial impact, though the definition is still evolving and remains in a state of flux, which may account for the conflicts, contributing to varied findings regarding its challenges and opportunities (Sailer *et al.*, 2023).

Non-academic and academic knowledge work share similarities, but translating research insights from non-academic environments to the university campus requires careful interpretation of such differences. Knowledge work generally refers to tasks and activities

primarily driven by cognitive processes such as problem-solving, critical thinking, analysis and innovation, often requiring creativity and non-linear thinking (Reinhardt *et al.*, 2011). Academic work refers to the activities carried out by employees in a higher education setting, primarily focused on generating, preserving and disseminating systematic knowledge and learning-related activities (Indergård *et al.*, 2022). This includes many supporting roles, such as student support, IT, finance and campus operations professionals. Academic support and non-academic knowledge work have similar characteristics, such as administrative tasks, support functions and operational responsibilities. By contrast, academic knowledge work has more differences and can be characterised by the addition of, for example, teaching, research and committee work (Macfarlane, 2011). Knowledge creation in academia occurs across interactions with colleagues, students, fieldwork and laboratories (Macfarlane, 2011; Teichler and Höhle, 2013).

Academics typically spend only 30%–40% of their time in offices, engaging in diverse activities such as teaching, meetings and conferences (Knoll, 2023). On-campus activities vary by discipline, with some requiring offices, other labs, studios or fieldwork sites (NTNU, 2018; Häne *et al.*, 2020). Arkesteijn *et al.* (2024) found that average office occupancy rates have dropped significantly, ranging from 23% to 30% post-COVID-19, compared to 32% to 43% pre-COVID-19. Hassell (2023) also identified notable differences in campus presence across academic disciplines. Engineering departments tend to spend more time on campus, while social sciences and humanities report fewer on-site days. Beta faculties, such as engineering and natural sciences, typically have more contact hours than alpha faculties due to lab sessions, practical workshops and technical training. Faculty members also face unique scheduling constraints, including teaching commitments varying throughout the year and lab sessions, which limit their flexibility in selecting on-site workdays. Consequently, preferred on-campus days may fluctuate throughout the year and across departments. These complexities suggest that spatial planning for university campuses presents greater challenges compared to non-academic organisations, requiring a more nuanced and flexible approach to accommodate academic staff's diverse needs and schedules.

## 2. Method

This study first identified spatial challenges associated with hybrid working through a narrative review. Papers were sourced from Scopus and Google Scholar. The search strategy used a combination of keywords related to hybrid work, including its various modalities (e.g. remote and in-person work), and university campus settings. Primary search terms encompassed concepts such as "hybrid work", "remote work", "in-person work", "workplace flexibility" and "blended work environments". These terms were complemented by conceptual derivatives and synonyms, including variations specific to higher education contexts, such as "university workspace", "campus work modes", "academic workplace adaptation" and "spatial planning for hybrid work". Boolean operators and truncation techniques were applied to refine search queries and ensure comprehensive coverage of relevant literature across multiple academic databases. Following the application of these search terms, the initial data set was screened for relevance based on title, abstract and keyword alignment with the study's focus. Duplicates and studies unrelated to hybrid work in university settings were excluded. A full-text review was then conducted to assess methodological rigour and thematic relevance. This process resulted in the identification of 27 studies that met the inclusion criteria for further analysis. The 27 studies were then analysed using thematic content analysis and the authors' expertise, revealing three key dimensions: spatial, psychosocial and organisational challenges, which are widely recognised within the field as central to understanding work environments. These dimensions, also highlighted by Peplińska and Mosiejko (2012), are integral due to their profound influence

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on professional tasks. While the study primarily focused on spatial challenges, psychosocial and organisational factors were included when relevant to campus spatial planning. A comprehensive list of challenges emerged, which were synthesised into sub-themes under the three dimensions through thematic content analysis and discussed between the first and second authors. Next, a workshop was held involving representatives from 12 of the 14 Dutch universities. Invitations were sent to real estate, facilities and campus management staff at all 14 Dutch universities. Participants held roles such as real estate policy officer, policy officer facilities and real estate and strategic housing advisor real estate and campus development, all of whom were responsible for the strategic planning, management and implementation of spatial changes within the campus as a result of hybrid work. Twelve universities sent representatives, while two cancelled at the last minute. Some universities sent multiple participants; whilst conferring between representatives from the same university was allowed, only one designated representative per institution was permitted to vote during the Delphi workshop. Several researchers were present during the workshop but were not permitted to vote and were only able to facilitate the conversation. The workshop aimed to contextualise the challenges to ensure their accuracy and relevance within the university campus setting, uncover any additional challenges and prioritise the most critical issues to address. The researchers first presented the 12 challenges from the review, providing participants with paper copies for extensive further deliberations. A Delphi-method approach (Von der Gracht, 2012) was used to rank challenges by importance, using iterative rounds of voting to reach consensus. Mentimeter facilitated anonymous voting to reduce bias, allocating one vote per university to ensure equal representation. After the first round, rankings were discussed in both group and smaller sub-group settings. Participants were asked whether any challenges had been overlooked. Three additional challenges were proposed by a single participant and subsequently agreed upon by the group. These were integrated, followed by a second voting round. The final rankings were determined after further group discussion and a third round of voting. Rankings were calculated using the Borda count method, where points were assigned based on preference, with the highest-ranked challenge receiving the most points. With 12 challenges, the top-ranked received 12 points, the second 11 and so on. This approach ensured a weighted consensus, with the highest-scoring challenge ranked as the most critical.

## 3. Findings

### *3.1 Challenges resulting from thematic content analysis of literature*

Table 1 presents the long list of challenges identified during the literature review, which were subsequently grouped into 12 challenges. It also illustrates how these challenges are linked to the three subdimensions of spatial, psychosocial and organisational factors.

The following section summarises the literature organised around the 12 identified challenges.

*Challenge 1: create a unified campus programme.*

The diversity of working practices and academic cultures poses significant spatial and organisational challenges for developing a unified campus programme. Campus spaces must support varied academic activities, yet their specialised and infrequent use leads to low utilisation rates (Macfarlane, 2011; Teichler and Höhle, 2013). Disciplinary differences exacerbate this, as academics in engineering and physical science departments are more likely to work on campus compared to those in the social sciences and humanities (Hassell, 2023). Office redesign has thus far been facilitated in part by reduced occupancy resulting from hybrid working practices (Sailer *et al.*, 2023) but repurposing underutilised spaces for alternative uses presents significant challenges. The inherent inflexibility of these assets means they cannot be readily adapted for other purposes, even when utilisation rates are low. The combination of inconsistent or unclear hybrid practices (Haubrich and Hafermalz, 2022),

**Table 1.** Grouping of challenges

| Single challenges | References | Dimension – Sub-theme | Main challenges |
|---|---|---|---|
| Underutilisation of campus settings driven by the need for a diverse range of academic specialised settings, resulting in increased cost | Macfarlane, 2011; Teichler and Höhle, 2013 | Spatial – the office | *1:* Create a unified campus program |
| Different working preferences between faculty | Rymarzak *et al.*, 2019 | | |
| Inconsistent or unclear hybrid policies | Haubrich and Hafermalz, 2022 | Organisational – resource and management | |
| Retaining team cohesion and connectivity | Yang *et al.*, 2022; Wang *et al.*, 2020 | Organisational – outcomes | *2:* Support both individual and group needs |
| Hybrid can both increase and decrease employee engagement | Knight *et al.*, 2023 | | |
| Decrease "water cooler" moments as a result of unplanned "in-person" days | Mas and Pallais, 2017 | Spatial – resources | |
| Equality issues and unintended outcomes | Sailer *et al.*, 2022 | Psychosocial – inequality and unintended outcomes | |
| Different employee groups are impacted differently | | Psychosocial – Demographics | |
| Unclear impacts of hybrid on financial performance and organisational outcomes | Ding and Ma, 2023 | Organisational – outcomes | |
| Limited insights on the climate impact of hybrid work | Balthasar *et al.*, 2024; Felstead, 2022 | | |
| A high degree of variation exists in workplace design and quality across campus | Van Marrewijk and Van den Ende (2018); Van der Voordt and Van der Klooster (2008) | Spatial – physical characteristics of the workplace | *3:* Choose the right layout design for the offices |
| Limitations of open-planned offices | Lancione and Clegg, 2013 | Spatial – the office | |
| Underutilisation of campus settings driven by an increase in home working | Arkesteijn *et al.*, 2024 | Spatial – the office | *4:* Deal with underutilisation of space without causing overcrowding at certain moments |
| Underutilisation largely condensed to Wednesdays and Fridays | | | |
| One-size-fits-no one | Appel-Meulenbroek *et al.*, 2022 | Spatial – physical characteristics of the workplace | *5:* Accommodate different work types and individual preferences |

(*continued*)

**Table 1.** Continued

| Single challenges | References | Dimension – Sub-theme | Main challenges |
|---|---|---|---|
| Limited insights on attraction and retention of talent | Kwiek and Roszka, 2024 | Organisational – outcomes | |
| Unintended outcomes and behaviours associated with the implementation of new workplace initiatives | Phillips and Klein, 2023 | Spatial – the office | *6:* Prevent resistance to the necessary changes |
| Historical sensitivity regarding the future of private offices | Wilhoit *et al.*, 2016 | | |
| Limited hospitality or facilities management strategy to entice employees | Groen *et al.*, 2019 | Spatial – resources | *7:* Enhance on-campus experience to attract staff to campus |
| Home working is not a universal option | Ipsen *et al.*, 2021 | Spatial – the home | *8:* Evaluate the quality of the homework environment to avoid inclusivity issues |
| Lack of suitable furniture and equipment to work from home | Bergefurt *et al.*, 2023 | | |
| Limited use of third or co-working spaces to accommodate flexible real estate needs | Orel and Bennis, 2020 | Spatial – resources | *9:* Access/availability to third spaces, such as coworking spaces |
| Limited management of employee experience in the digital environment | De Boer, 2021 | Organisational – resource and management | *10:* Integrate the various physical work locations with the digital experience |
| New issues require multi-disciplined skills to solve | Chan and Foster, 2022 | | *11:* Experience, resources, and position of the real estate support team |
| Determining the optimum balance of autonomy and control | Appel-Meulenbroek *et al.*, 2022 | Psychosocial – choice and autonomy | *12:* Determine the best levels of autonomy and control |
| Preventing isolation and burnout: | Bodner *et al.*, 2022 | Psychosocial – well-being and work–life balance | |

**Source(s):** Authors' own work

decentralised leadership and numerous stakeholders further complicates the creation of a cohesive university-wide strategy (Rymarzak *et al.*, 2019).

*Challenge 2: support both individual and group needs.*

Navigating trade-offs between individual needs and group outcomes spatial, psychosocial and organisational dimensions. Hybrid work emphasises flexibility and autonomy, which often contrasts with the collective ethos of academia, creating tension between personal and organisational goals. A manager and an employee averaging 2.5 remote days per week have only a 19% chance of meeting in person (Cushman and Wakefield, 2022). Reduced in-person interactions can create siloed collaboration networks, weakening team cohesion and reducing innovation (Yang *et al.*, 2022; Wang *et al.*, 2020). Remote work may also hinder career progression and skill development, particularly for junior staff reliant on senior colleagues' mentorship (Mas and Pallais, 2017; Schuller and Casanova, 2023). While hybrid work can enhance engagement (Weideman and Hofmeyr, 2020), isolation and reduced team cohesion often undermine these benefits (Knight *et al.*, 2023). Academic staff face unique complexities, including aligning in-person days with teaching schedules, specialised lab access and student needs, requiring a tailored approach to hybrid work. Balancing the well-known paradox of group interaction versus individual needs for focused work poses significant challenges, and prioritising individual preferences for remote work over group collaboration can negatively impact organisational outcomes. Environmental concerns, such as increased CO2 emissions from regular commutes (Balthasar *et al.*, 2024; Felstead, 2022) and concerns about financial performance (Ding and Ma, 2023), further highlight the need for balanced workplace strategies.

*Challenge 3: choose the right layout design for the offices.*

Many universities have adopted open-plan offices for academic and support staff (Wilhoit *et al.*, 2016; Lancione and Clegg, 2013), but dissatisfaction arises due to noise and distractions. The demand for environments supporting concentration – both at home and on campus – questions the suitability of open-plan layouts for focused tasks. Van Marrewijk and Van den Ende (2018) observed that such environments often fail to meet academics' needs for autonomy and privacy, echoing earlier findings by Van der Voordt and Van der Klooster (2008). The inability to sit near team members further discourages campus attendance (Van Marrewijk and Van den Ende, 2018). Private offices do not necessarily increase on-campus presence (Migliore *et al.*, 2024a), and even academics with private offices were found to spend less time on campus, likely due to greater flexibility (Hassell, 2023). Identifying an optimal mix of secluded spaces for focused work, private discussions and minimal distractions remains challenging. In academia, this is compounded by the need for confidential spaces for student supervision or activities requiring specialised equipment.

*Challenge 4: deal with underutilisation of space without causing overcrowding at certain moments.*

Academic offices have historically shown low utilisation rates, with pre-pandemic occupancy ranging from 30% to 40% of a standard workweek (Knoll, 2023). The pandemic worsened this, dropping rates to 20%–30% (Hesslink, 2023; Knoll, 2023; Arkesteijn *et al.*, 2024). Peak attendance in universities generally occurs from Tuesday to Thursday (Arkesteijn *et al.*, 2024), with Mondays and Fridays being most preferred for working remotely (The Dutch Central Bureau of Statistics, 2021). Despite low utilisation rates, unpredictable on-site attendance and cultural norms can still cause overcrowding. Also, higher occupancy does not always correlate with perceived crowding, as office layout and spatial density influence this perception (Brouwer *et al.*, 2022).

*Challenge 5: accommodating different work types and individual preferences.*

Balancing space allocation with individual preferences is complex. Top-performing faculty members are critical for enhancing teaching, research and partnerships that ensure

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institutional success (Kwiek and Roszka, 2024). Office spaces must support diverse activities despite fluctuating utilisation and challenging, efficient resource management. The diverse range of personal preferences and work styles makes a one-size-fits-all solution unfeasible (Appel-Meulenbroek *et al.*, 2022), complicating the balance between space allocation and individual needs. This challenge becomes even more pronounced if universities (spatially) reward top talent and highly productive faculty members who significantly contribute to teaching quality, research output and the broader intellectual environment. Such individuals play a crucial role in attracting students, securing funding and fostering partnerships, all of which are vital for a university's long-term success and competitiveness (Kwiek and Roszka, 2024). Office spaces must accommodate many work activities, even though much work occurs off-campus.

*Challenge 6: prevent resistance to the necessary changes.*

Wilhoit *et al.* (2016) highlight spatial interventions, particularly those affecting key stakeholders such as professors, can disrupt the established culture of work, potentially leading to resistance, diminished ownership and even staff attrition. Workplace redesign and spatial strategies in universities are often complex and sensitive, especially concerning private offices. Currently, 72% of international academics work from private offices (Hassell, 2023). The allocation of academic office space is a nuanced and contentious issue, deeply intertwined with spatial, social and cultural factors (Wilhoit *et al.*, 2016). Changes like activity-based working (ABW) can lead to counterproductive behaviours, including increased remote work. However, involving stakeholders in the change process reduces resistance and fosters acceptance (Phillips and Klein, 2023). While many academics value dedicated workspaces, a notable proportion of those with private offices are willing to share in exchange for remote work flexibility (Hassell, 2023). Despite these insights, many universities continue to face strong resistance to change, highlighting the need for thoughtful, inclusive approaches to spatial planning.

*Challenge 7: enhance on-campus experience to attract staff to campus.*

Many organisations prioritise enhancing hospitality and facilities management services as a strategic approach to creating more inviting, enjoyable and well-being-centred workplace environments (Arampatzi and Burger, 2020). However, within university campuses, the potential of hospitality and facilities management strategies to enhance the on-campus experience often remains underutilised. A key consideration is whether the campus environment can offer a sufficiently compelling experience to attract and retain staff and students. In this context, facilities management plays a vital role as a strategic tool in campus spatial planning, ensuring that physical spaces align with user needs (Groen *et al.*, 2019; Nanayakkara *et al.*, 2021). Well-designed spaces enhance functionality and aesthetics and facilitate informal interactions or "water cooler moments", which are crucial for fostering innovation and strengthening social ties (Sailer *et al.*, 2022).

*Challenge 8: quality levels of the homework environment create inclusivity issues.*

Not everyone can work from home, raising potential inclusivity concerns. The physical characteristics of the home–work environment may limit the feasibility of remote work (Ipsen *et al.*, 2021). Spatial constraints, such as noise and limited workspace, can negatively affect employees' productivity and comfort (Bergefurt *et al.*, 2023). Additionally, the ergonomic suitability of the home workstation plays a crucial role in the effectiveness of remote work (Seva *et al.*, 2021). Financial assistance for setting up and maintaining a home office can enhance productivity and foster a stronger connection to the organisation (Adikesavan and Ramasubramanian, 2023).

*Challenge 9: access/availability of third spaces, such as coworking.*

Third spaces are well understood in literature (Brouwer *et al.*, 2022) and have been acknowledged as valuable tools for optimising the utilisation of real estate assets, particularly in managing headcount growth, occupancy and commuting challenges within existing facilities (da Silva, 2021). Despite their potential, universities have limited experience incorporating third spaces into their real estate offerings for staff (Orel and Bennis, 2020). Current strategies focus on managing traditional office or campus environments, often overlooking the potential of hybrid locations within the broader "ecosystem of places", such as coworking and other third spaces.

*Challenge 10: integrate the various physical work locations with the digital experience.*

Research suggests that organisations that leverage technology as an enabler of hybrid work are better positioned to reap the benefits of flexibility while maintaining operational efficiency and employee engagement (Thompson *et al.*, 2020). As Sailer *et al.* (2023) argue, the social function of both physical and digital spaces must be emphasised, as the interplay between these realms can shape social relations within hybrid work environments. However, achieving this integration remains a significant challenge for many organisations. During the COVID-19 pandemic, universities demonstrated a unique capacity to adapt swiftly compared to other sectors, mainly due to their pre-existing digital infrastructure for teaching. This allowed them to transition their operations quickly, minimising disruptions and maintaining core functions, in contrast to organisations more resistant to remote work (De Boer, 2021).

*Challenge 11: experience, resources and position of the real estate support team in the organisation.*

The shift to hybrid work models has necessitated closer collaboration among campus management, real estate and facilities teams, human resources and IT departments (Chan and Foster, 2022). This integration has expanded the responsibilities of real estate teams, requiring them to address aspects traditionally managed by other departments, such as employee experience and digital infrastructure. Real estate professionals may lack the training to manage these new responsibilities effectively. As McKinsey and Company notes, the workplace is increasingly flexible, making the role of professionals who manage and transform office spaces even more critical (Kirschner, 2023). This evolution suggests that the success of real estate organisations now hinges on their ability to influence and integrate multiple disciplines, significantly increasing the complexity of real estate activities. This transdisciplinary approach may further complicate the development of project budgets and business cases, as it necessitates integrating diverse services and perspectives into a cohesive strategy, which was not previously the standard practice.

*Challenge 12: determine the best levels of autonomy and control.*

The psychosocial dimensions of hybrid work highlight the balance between autonomy and control. Post-pandemic "return to office" discussions emphasise employee choice in work location, which has been shown to boost engagement, productivity, retention and satisfaction (Gibson *et al.*, 2023; Appel-Meulenbroek *et al.*, 2022). However, hybrid work also blurs professional and personal boundaries, increasing risks of isolation and difficulty disconnecting (WHO and ILO, 2022). These challenges can lead to stress, depression and burnout (Bodner *et al.*, 2022). Ensuring adequate on-campus opportunities helps foster social connections and reduce isolation, but it remains difficult to determine the optimal balance between autonomy and control.

### *3.2 Workshop results*

The three rounds of prioritisation demonstrated substantial consistency across rounds (see Table 2) and revealed a strong consensus among the universities regarding the primary challenges. In each round, real estate representatives from the 12 universities consistently

**Table 2.** Summary of challenge prioritisation (in order of last round)

| Challenge | Prioritisation Round 1 | Prioritisation Round 2 | Prioritisation Round 3 |
|---|---|---|---|
| Prevent resistance to the necessary changes (C6) | 1 | 1 | 1 |
| Determine optimum levels of autonomy and control (C12) | 4 | 4 | 2 |
| Support both individual and group needs (C2) | 3 | 2 | 3 |
| Accommodating different work types and individual preferences (C5) | 2 | 3 | 4 |
| Deal with underutilisation of space without causing overcrowding (C4) | 5 | 6 | 5 |
| Enhance on-campus experience to attract staff to campus (C7) | 6 | 10 | 6 |
| Experience, resources and position of the real estate support team in the organisation (C11) | 7 | 8 | 7 |
| Defining the role of the (line) manager (*additional challenge one)* | n/a | 7 | 8 |
| Ensuring the necessary speed and agility in response to external influences (*additional challenge two)* | n/a | 5 | 9 |
| Choose the right layout/design for the offices (C3) | 9 | 9 | 10 |
| Historic variability in the campus portfolio hinders alignment between existing spatial assets and evolving needs and desires: (*additional challenge three)* | n/a | 11 | 11 |
| Create a unified campus program (C1) | 8 | 12 | 12 |
| Integrate the various physical work locations with the digital experience (C10) | 10 | 13 | 13 |
| Evaluate the quality of the homework environment to avoid inclusivity issues (C8) | 11 | 14 | 14 |
| Access/availability to third spaces, such as co-working spaces (C9) | 12 | 15 | 15 |

**Source(s):** Authors' own work

identified "*resistance to necessary changes*" in office spatial design and use as the most critical challenge.

After the second voting round, participants were invited to identify any overlooked challenges in the literature review and exercise. Participant groups proposed three additional challenges, arguing they were absent from the initial list of 12. Following a full group discussion, all three were unanimously added to the prioritisation list for further voting. These challenges were:

- Defining the role of the (line) manager: University representatives noted that line managers often do not lead or play a strategic role in workplace and real estate decisions or spatial strategies, which can diminish the effectiveness of implementation and reduce engagement among campus employees.
- Ensuring the necessary speed and agility in response to external influences: University representatives noted that the rapid pace of change in the external environment has made it challenging for the university to adapt in a timely manner to reflect these external changes and values, increasing the risk of misalignment with broader institutional priorities, including those related to hybrid work.
- Historic variability in the campus portfolio hinders alignment between existing spatial assets and evolving needs and desires: University representatives highlighted that the significant variation in building type, quality, age and condition presents a persistent challenge to designing and implementing a coherent spatial strategy across the campus. This historical diversity complicates efforts to align existing spatial resources with evolving functional needs and expectations, particularly within the constraints of limited financial and physical capacity.

However, none of these additional challenges ranked among the top priorities in the final lists.

The ranking's second, third and fourth positions fluctuated slightly across the rounds but remained consistent regarding the challenges themselves. These challenges were: *determining the optimum levels of autonomy and control*, *supporting both individual and group needs* and *accommodating different work types and individual preferences*. The fifth position was consistently assigned to addressing the "*underutilisation of space without causing overcrowding*".

Visualising the results from Round 3 (see Figure 1) reveals strong agreement among the universities regarding the importance of the top five challenges. A clear gap is evident in the Borda count between fifth and sixth place, after which the ranking scores become relatively similar for Positions 6 through 11. This group includes the three additional challenges identified, along with "e*nhancing the on-campus experience*" (C7), "*layout considerations*" (C3) and the "r*esources and skills of the real estate department*" (C11). The lowest priority was assigned to off-campus support through coworking spaces, the home workspace (C8, C9) and the overall digital experience (C10). Additionally, participants expressed little urgency in pursuing a unified campus program for hybrid working (C1).

## 4. Discussion and implications

This study is the first to identify the most important spatial challenges campus real estate support teams face in supporting the transition towards hybrid working on a university campus. It extends existing research on hybrid work by prioritising challenges specific to the university context as office workplaces. Although many challenges align with those in non-academic knowledge work environments, the academic context introduces complexities that exacerbate these issues. Factors such as the autonomy-driven culture, balancing individual versus group needs, accommodating different work types and individual preferences and the

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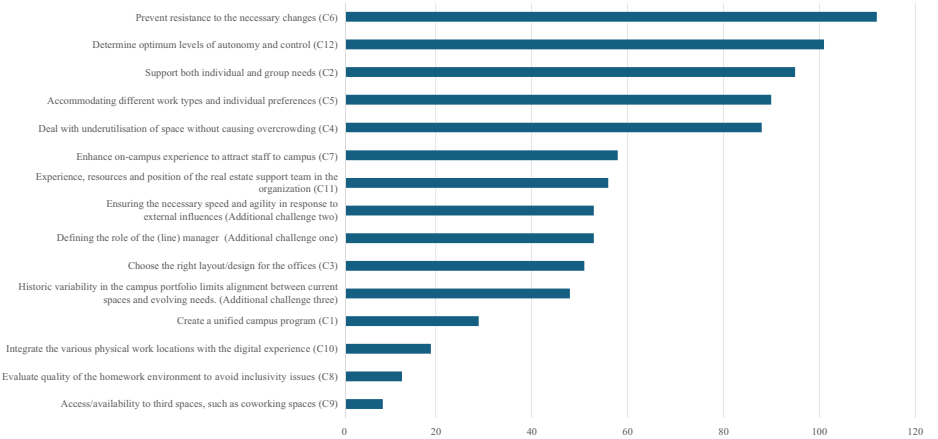


**Figure 1.** Mentimeter Borda count – final round of voting
**Source:** Authors' own work

broader range of spaces used for academic activities contribute to these challenges, making them more difficult to address than in non-academic settings. Many academics resist shifting away from fixed work locations and private offices, even though their work often involves a wider range of environments, such as labs and teaching spaces, compared to typical office workers. This strong preference for fixed and private workspaces, combined with the rise of hybrid working, further exacerbates underutilisation of space and may increase the sensitivity of implementing hybrid working practices at universities. However, this perspective within the workshop was expressed by university facilities and real estate managers. Had academic employees participated in this exercise, they may have presented a different perspective on transitioning away from fixed work locations. This preference for fixed work locations is not unique to academia; research indicates that knowledge workers more broadly also exhibit a strong inclination for fixed desks and consistent work locations (Nielsen and Knardahl, 2020). However, this reflects the viewpoint of the representatives in this study and aligns with findings in the wider literature (Hassell, 2023).

The characteristics of academic environments, including autonomy, egalitarianism and a strong individualistic ethos (Edgar and Geare, 2013), further complicate change implementation. Leadership and decision-making are dispersed among top talents, making it difficult for real estate departments to enforce changes, even with executive support. In a study of ten global universities, Haubrich and Hafermalz (2022) found that adaptations to working arrangements are largely driven by dialogues between employees and line managers, with final decisions resting on managerial approval. During the discussions on the challenges, the university representatives indicated that they missed a unifying voice or mediating body in top university leadership to communicate the urgency and necessity of changes from the viewpoint of more overall organisational goals and outcomes. While this conclusion was drawn from a discussion with representatives from Dutch universities, Rymarzak *et al.* (2019) already emphasised that decentralised leadership complicates the creation of cohesive university-wide strategies beyond The Netherlands. Additionally, a more recent study of international university and campus management networks (Bacani *et al.*, 2024) confirmed the urgency and necessity to support campus decision makers in the UK, Finland, Sweden and Germany.

Besides adding extra difficulty to implementing change, the university context also complicates balancing autonomy versus control (Den Heijer, 2021). The more autonomy academics feel they have in their organisation, the more ambitious they become in terms of research agenda, and thus, they are potentially more productive in terms of research output and show stronger identification with the university (Horta and Santos, 2020). For a supportive resource, real estate departments in universities can thus expect even more resistance and discussion about undesired changes. Understanding trade-offs (as also demonstrated in Van Staveren *et al.*, 2024) and the consequences of decisions emerged as crucial from the discussion. University spatial changes often require extended change management processes to allow stakeholders sufficient time to engage and contribute while simultaneously fostering a sense of urgency to drive timely action. The disparity in change management timeframes between employees and corporate real estate (CRE) teams should be highlighted, with CRE requiring quicker action than employees' readiness for change. Moving into a new building or a redevelopment was put forward as a possible necessary catalyst to redesign workplaces to accommodate more shared spaces.

Besides the top five challenges and their intensification from the campus context, this study also identified that the university real estate representatives did not see many additional spatial challenges of hybrid working that are specific to the campus context. Besides the already mentioned role of the (line) manager, the extra challenges showed further complexity of the campus context through the many external influences and the diversity in quality and style of their existing real estate stock. The discussion on the extra challenges emphasised the difficulty of each building being different than the previous, further complicating the implementation of consistent or standardised hybrid working ideas and policies. Perhaps this is why, the representatives did not prioritise the challenge of creating a unified campus program, as they might feel that it is highly unlikely to be possible. The extra challenges add that decisions cannot be made in isolation and are influenced by external factors such as energy prices, funding sources and the broader societal representation of universities. The addition of these external forces echoes the acknowledgement amongst the representatives that spatial challenges associated with hybrid work are interconnected, complex and cannot be dealt with in isolation.

While this study focused primarily on the five highest-ranked challenges, consistently prioritised across all voting rounds, additional insights also emerged from lower-ranked items. Due to space limitations, only three of these are selected for further discussion. This approach reflects the consistently lower prioritisation of middle- and lower-ranked challenges, with little differentiation between them (see Figure 1). Due to word limits, they are not discussed in detail. However, the bottom three challenges are briefly examined to provide insight into the lowest-prioritised issues, which offer a distinct perspective on institutional attitudes and emerging areas of lower perceived urgency. At the bottom of the list, the potential use of coworking spaces does not seem of interest (yet), which is in line with findings from recent studies (e.g. Orel and Bennis, 2020). Perhaps more surprisingly, also the struggle of those who work from home in a low-quality environment, and the possible inequalities this might cause, seems less of a priority than "fixing" the campus first. With employees expressing a preference to spend an average of 2.9 days on campus (Hassell, 2023), it raises the question of whether the remaining 2.1 days can continue to be overlooked in organisational planning. For knowledge work, whether academic or not, individuals rely more on mental energy than physical energy (Heerwagen *et al.*, 2004), making it crucial to protect cognitive capacities and mental well-being. A review by Bergefurt *et al.* (2023) highlights that the physical design of the home workplace significantly impacts mental health and well-being in various ways. However, this issue may need to be discussed between the

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real estate and human resource management teams first to gain a clearer understanding of its urgency in relation to the campus environment.

### *4.1 Implications for practice*

While this study identified the most important "spatial challenges", the findings make clear that they challenge the organisation as much as the campus. Considering the multifaceted impact of hybrid working on organisations – on where and how staff works, interacts, socialises and uses energy – the implications for practice extend beyond campus real estate departments. The effects on organisational, social and financial aspects necessitate strategic development, human resource management and financial departments to be included in decision-making about the hybrid workplace. Without this inclusive approach, efforts to increase space utilisation or meet employee needs could jeopardise the organisation's financial sustainability or long-term objectives.

To facilitate the discussion about practical implications, two contrasting strategies have been formulated in a parallel study (Den Heijer *et al.*, 2024): "we are a campus university", which counts on the commitment of employees to be physically present on campus more frequently, while fostering an on-campus community and teamwork; and "embrace the hybrid reality", which assumes an increase in off-campus working, whether from home or other locations and consequently less territorial space on campus. These strategies are not limited to the Dutch context, while they respond to similar trends in international universities (Den Heijer, 2011, 2021).

Raising awareness of the collective challenges for the future of university workplaces in the context of resource scarcity (ambitious sustainability targets and often budget cuts) is the first step towards finding practical solutions that safeguard organisational performance and employee well-being. Effective workplace strategies should be combined with incentives to promote space and energy efficiency among campus users (Den Heijer *et al.*, 2024). To effectively manage challenges such as "underutilisation" and "overcrowding", it is essential to gather more data on the utilisation of office space and the overall composition of the real estate portfolio. Only with detailed data on space usage patterns over time can these issues be properly addressed, as many local differences within Dutch universities were shown (Arkesteijn *et al.*, 2024).

Co-creating university spaces between real estate teams and campus employees, coupled with extended change management periods, seems crucial for stakeholder engagement and successful transitions.

### *4.2 Limitations and future studies*

Hybrid work is a contemporary phenomenon in the context of workplace research that has been increasingly used since the COVID-19 pandemic. The narrative review approach, including grey literature that appears online earlier, allowed for the timely inclusion of recent findings but may lack consistent definitions of challenges. Some challenges are formulated as a consequence of hybrid work, while for others, they are an observation of something that may have consequences in the future. Although, in this study, the challenges were explained in-depth to the audience ensuring understanding, future studies could, therefore, harmonise the definition and categorisation of these challenges by closely examining their specifics in detail to develop more effective strategies for addressing them. Further, future studies could consider refining the formulation of individual challenges by avoiding the use of conjunctions such as "and", which may conflate distinct issues and reduce analytical precision. Future studies should explore specific individual challenges in detail and assess real-world solutions. Also, during the discussions about prioritising the challenges, it was regularly revealed that the prioritised

challenges are linked to lower-ranked challenges. Their interconnections were noted but not explored, requiring further study to understand how addressing one issue may affect others. Also, the ranking of the challenges is based on the viewpoint of real estate and facilities employees at campuses, while other support services, the executive board and the employees themselves might provide a different ranking. Broader stakeholder involvement could yield a more comprehensive prioritisation of challenges.

While this study focused on challenges, future research should also investigate the benefits of hybrid work in academic settings, assessing trade-offs and financial feasibility. Further, this paper only reviewed the influence of hybrid work on the office functions of university campuses. Exploring the integration of online education with hybrid work, cultural differences in higher education institutions and inclusivity in hybrid experiences could provide deeper insights.

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