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The Resilient Home: Rethinking Space in a Remote Work Era

T.M. Sachithra K. Thilakarathne[1], Brenda Vale[2] and Emina Kristina Petrović[3]
[1,2,3] Victoria University of Wellington, Wellington, New Zealand
sachithra.thilakarathne@vuw.ac.nz[1], brenda.vale@vuw.ac.nz[2], emina.petrovic@vuw.ac.nz[3]
[1] 0009-0002-1824-0873, [2] 0000-0002-6241-6488, [3]0000-0003-3446-093X

Abstract: Work has long been an integral aspect of human life, evolving through economic, cultural, societal, and technological changes. In recent years, remote work or work-from-home (WFH) has become more prevalent in the broader landscape due to technological advancements. In a world where remote work continues to influence the design, use, and experience of the home, this paper examines how resilience can be observed within the home, serving the dual demands of being both a living space and a workspace in the post-pandemic context of home workspaces in New Zealand. This was part of an exploratory research study, as home office spaces have not been extensively examined. The research used an ethnographic approach to gather primary data using semi-structured video interviews supported by photographic evidence. The study identified two interrelated forms of resilience in the home: spatial and user-driven. The results suggested that the resilience of internal space in the home is not solely structural, but also behavioural and personal, shaped by individual preferences, routines, and experiences. This emphasizes the importance of designing flexible and responsive housing that accommodates evolving patterns of living and working which requires not only spatial adaptability but also the ability to cope with occupants' needs and values that shape domestic environments. Future research is required to explore how these patterns evolve across time, geography, and social context.

Keywords: Resilience, Remote Work, Home Offices, COVID-19.

1. Introduction

Work has been a fundamental human activity that shapes social structures, individual identities, and everyday life. The history of the workplace has seen various changes and developments over time, driven by different factors (Duffy & Powell, 1997). The practice of working from home or remote work dates back to ancient times when people used to operate their businesses from their homes (Wigglesworth, 2011). The rise of technology has made remote work not only possible but also a more common choice for many people (Hansen & Saini, 2020). However, the outbreak of the COVID-19 pandemic in 2019 has significantly changed the way we work (Cuerdo-Vilches et al., 2021). Remote work became the new normal during the pandemic, challenging traditional office-based work practices, and it has continued to be a prominent feature in the contemporary work landscape (Aksoy et al., 2022).

As working from home (WFH) becomes an ongoing feature, homes are increasingly required to serve dual roles accommodating both domestic and professional needs, prompting the need for further research on how the home adapts in relation to this requirement.

This paper explores how the resilience of the home is manifest in the post-pandemic context under two main themes; spatial and user-driven resilience. The exploratory study was conducted in New Zealand, with Wellington as the primary research location. By comprehensively analysing the physical characteristics of home office spaces, the study hopes to contribute to filling a gap in knowledge regarding the physical setting of WFH. As urban living continues to evolve, designing for resilience at the domestic scale will be critical in supporting sustainable and adaptable home environments.

The findings of this research have the potential to inform best-practice guidelines for designing home office spaces that improve functionality, well-being and adaptability to meet the changing demands of working from home. These insights can support researchers, businesses, industry professionals and policy makers in shaping future housing design and helping the adaptability of the occupants. As urban living keeps evolving, designing for resilience at the domestic scale will be essential to meet the dual roles of the home as both a living environment and a workspace.

2. Background

Research into working from home has expanded rapidly, especially since the COVID-19 pandemic, with much of the literature centering on organizational outcomes such as employee productivity (Anakpo et al., 2023), mental and physical well-being (Blank et al., 2023), and flexible work policies (Moglia et al., 2021). However, a growing body of work recognises the spatial challenges of remote work particularly the mismatch between domestic spaces and professional work demands (Cuerdo-Vilches et al., 2021; Mayer & Boston, 2022). There remains a noticeable gap in understanding how the built environment at the scale of the home supports or limits remote work, especially in terms of design including the spatial configuration, furniture layout, access to natural light, acoustic conditions, and the personalization or adaptability within the home. This is increasingly important as homes are now expected to perform dual roles both as living environments and functioning workplaces.

The concept of resilience in the built environment has gained traction in urban and architectural research. Traditionally applied at the scale of infrastructure or neighborhoods, resilience refers to the ability of systems to absorb, adapt, and respond to disruption (Wu et al., 2013; Manyena, 2006; Haigh & Amaratunga, 2010). Resilience in the built environment can be understood through various lenses structural, functional, spatial, social, environmental, and economic (Ribeiro, Gonçalves, et al., 2019; Meerow et al., 2016).

In the context of remote work particularly during and after disaster situations such as the COVID-19 pandemic, this idea can be scaled down to the home, where spatial and user-driven adaptations allow occupants to maintain functionality and well-being under changing conditions (Cuerdo-Vilches et al., 2020; Itma & Monna, 2022). While remote work was not a new phenomenon, the pandemic significantly accelerated its adoption, making it a completely new experience for some individuals and households who had not previously worked from home. Beyond the pandemic, such domestic resilience is increasingly relevant in the face of other potential disruptions, which may potentially challenge the adaptability of home environments. This study builds on that framework by examining how individual households demonstrate everyday resilience through the reorganization of domestic space and behavioural flexibility.

By focusing on physical and behavioral characteristics of home workspaces, this study contributes to both workplace and built environment literature, offering a new lens through which to understand domestic resilience in a post-pandemic world.

3. Methodology

This study is exploratory and inductive, aiming to understand how remote work affects physical spaces in the post-pandemic era. A qualitative, cross-sectional approach was employed, using semi-structured video interviews and participant-submitted photographs to analyze home workspace configurations. Three primary economic sectors; primary (Natural resource industries), secondary (Manufacturing & construction), and tertiary (Service/Knowledge work) were considered, with the tertiary sector chosen due to its dominant contribution to New Zealand's economy and GDP growth and as the most common for remote work. Initial semi-structured video interviews were conducted to start data collection but also assess the feasibility and effectiveness of the questions. In its pilot phase, this study interviewed six employees from various organizations in New Zealand who worked in an office and worked from home at least once a week. These interviews helped determine the data feasibility of the collection plan and effectiveness by assessing the questions' validity for collecting the required data leading to refinements of both the interview questions and the data collection plan after the pilot interview. For the main semi-structured video interviews, a non-probability sampling strategy was used, (snowball sampling), leveraging personal contacts and social media platforms such as LinkedIn and Facebook to recruit participants. The study included 30 participants who work from home at least one day per week. With Wellington as the primary research location, snowball sampling also brought in participants from other parts of New Zealand. The semi-structured Zoom interviews lasted 45 - 60 minutes. Video interviews were particularly valuable, as they provided a glimpse into participants' work-from-home setups, offering deeper insights into their work environments. To further enhance the accuracy of findings, participants also submitted photographs

of their home offices, allowing for a visual assessment of workspace setups. This research was approved by the Te Herenga Waka - Victoria University of Wellington Human Ethics Committee (Reference: 31450).

3.1. Interview Data

The semi-structured video interviews were transcribed and categorized using an inductive approach. Themes emerged from the data rather than being pre-determined, aligning with the study's exploratory nature. This approach facilitated a deeper understanding of participants' experiences and insights related to their home workspace design.

3.2. Visual Data

The submitted workspace photographs and videos of the interviews were analysed using visual content analysis of participants' workspaces. This approach allowed for a deeper understanding of the participants' workspaces by revealing details that might not have been explicitly mentioned during the interviews. The visual data helped contextualize the verbal information and provided supportive evidence for the themes identified in the interviews. Based on the visual data from the participants, workspace layouts were drawn on AutoCAD to get a special understanding of each set up. These images represent the first systematic visual record of home workspaces in New Zealand, providing a useful baseline for future studies.

3.3. Demographic Overview of the Sample

Most participants (n=22) were based in Wellington, while the remaining were located across Auckland, Christchurch, Hastings, Wairarapa, Nelson, Hamilton, and the Kapiti Coast. This regional inequity is reflective of my own geographic location in Wellington, which naturally shaped the participant pool. At the same time within the New Zealand context Wellington stands out (Stats NZ, 2024a), being consistently above the national average for WFH, reflecting the concentration of office-based roles in the capital city and seat of government. As such, the geographic concentration of participants constrains the representativeness of this study, meaning that findings should be interpreted as indicative insights rather than generalisable. Participants had various occupations, in tertiary sector roles such as education, digital design, software, and public service. Most participants worked from home at least two days per week, with 12 participants working three or more days, and 8 participants working remotely full-time. This is notably higher than national trends for instance, the Public Service Commission (PSC, 2025) found that 33% of public servants typically worked from home one to two days per week.

Interestingly, 17 out of all the participants had prior experience with remote work before the COVID-19 pandemic. This suggests that working from home was not an entirely new concept but rather an evolving and increasingly normalized practice. A few had only transitioned to full-time remote work more recently, as a response to post-pandemic flexibility. For example, two participants reported working for companies that had completely eliminated their physical office spaces reflecting a move toward location-independent work structures and more digitally driven operations.

Household dynamics also influenced the WFH experience. Nine participants regularly shared their workspace with other family members, which often required compromises, spatial rearrangements or adjustments to daily schedules to manage overlapping activities. 16 participants worked alone during the day, and four lived by themselves.

Most participants (77%) lived in standalone houses, which aligns with broader housing patterns in New Zealand (Stats NZ, 2024b). 16 participants reported having a designated room specifically for work purposes, providing a clear separation between professional and domestic life. Notably, six of the eight full-time remote workers were among this group, suggesting that dedicated workspace availability may be linked to the probability of long-term remote work arrangements.

4. Findings

4.1. Spatial Resilience

The spatial resilience of the home work environment refers to the ability of domestic spaces to accommodate and adapt to remote work demands. This section explores how participants reorganised and repurposed their home layouts to meet the challenges of working from home.

4.1.1. Tenure and Control Over Space

Figure 1 indicates the relationship between housing tenure and the type of workspace used at home.

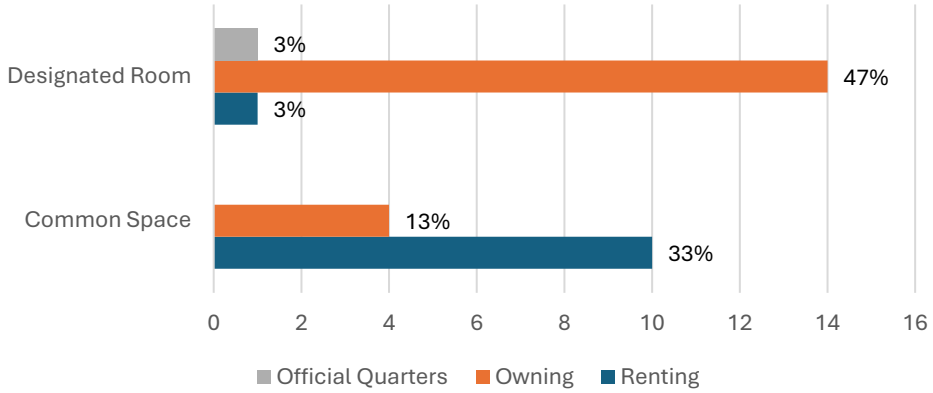


Figure 1: Distribution of Workspace Type by Housing Tenure

*Official Quarters - Housing provided by an employer as part of a work arrangement (military, police, or large companies)

A Designated Room refers to a dedicated room used for work, while a Common Space refers to a workspace in a shared living area (bedroom, living/dining room, hallway) in this context. Among homeowners, the majority (47%) have access to a designated room for work, while only 13% use common spaces such as bedroom, living or dining areas for work. In contrast, renters predominantly work in common spaces (33%), with only one renter having a dedicated room. Employer-provided housing was rare in this sample, with just one participant, who also had a designated workspace. These findings indicates that homeowners have greater spatial flexibility to establish designated rooms for work, whereas renters are more likely to adapt shared household spaces such as bedroom, living/dining room, hallway for work. Overall, the data highlights how people's ability to adapt spatially to create, modify, or control their work environment is shaped and constrained by housing tenure.

4.1.2. Workspace Types and Domestic Repurposing

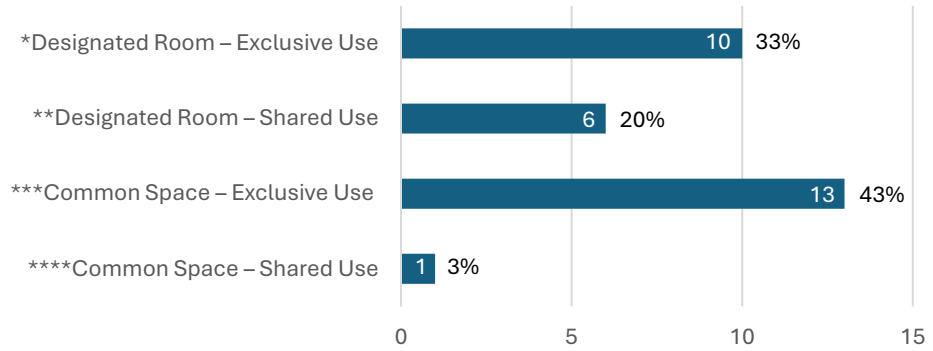


Figure 2: Types of Workspaces of the Participants

Workspace types are defined as follows: **A Designated Room – Exclusive Use** is a dedicated room used only by the participant for work, while a **Designated Room – Shared Use** is a dedicated room also shared with other household member/s for work. A **Common Space – Exclusive Use** refers to a workspace in a shared living area (bedroom, living/dining room, hallway) used only by the participant, whereas a **Common Space – Shared Use** is similarly located but shared with other household member/s for work.

Figure 2 highlights how participants have adapted their homes into four workspace types, with the most common being exclusive use of common areas like bedrooms. While not purpose-built for work, because work

and sleeping occur at different times, these spaces were repurposed to meet professional needs. 54% of participants used designated rooms whether shared or exclusive use, reflecting a growing shift toward dedicated home offices. This trend suggests that homes are not only coping with disruption but evolving structurally to support long-term remote work.

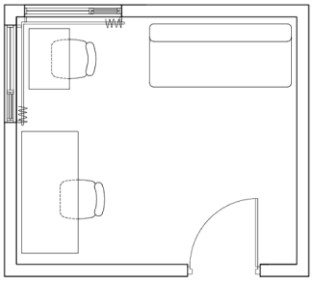
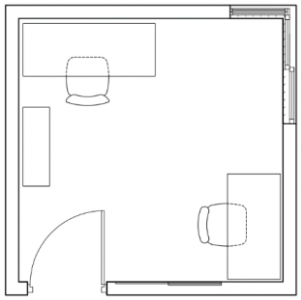
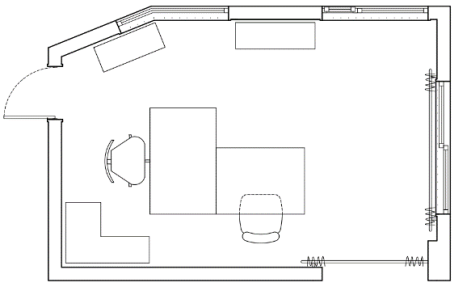
	Layout	Photo Reference
1		
2		
3		

Figure 3: Participants with Designated Room – Shared Use

A notable 23% of participants reported sharing either designated rooms or common areas for work with other household member/s for work, showing a more layered spatial adaptation. Figure 3 illustrates layouts and images of some participants who share the same space with other household members for work. Among the seven participants, five worked from home full-time, with household members occasionally sharing the workspace on specific days of the week. The participant in room 2 shares the space with their child. In these situations, the challenge was not just about setting up a workspace it also meant figuring out how to share it with others at home. Participants talked about managing schedules, and dealing with background noise or privacy when more than one person was having an audio or video event. Participants described coordinating their work schedules, taking calls in another part of the house, or temporarily moving to a different room when a household member had a meeting or required quiet. These examples show that spatial resilience is not only about individual adjustments, but also about compromises that happen between people living together, trying to make the space work for everyone.

4.1.3. Flexibility and Mobile Use of Space

Several participants described using alternative spaces within their homes for work, depending on their tasks, comfort, or environmental conditions.

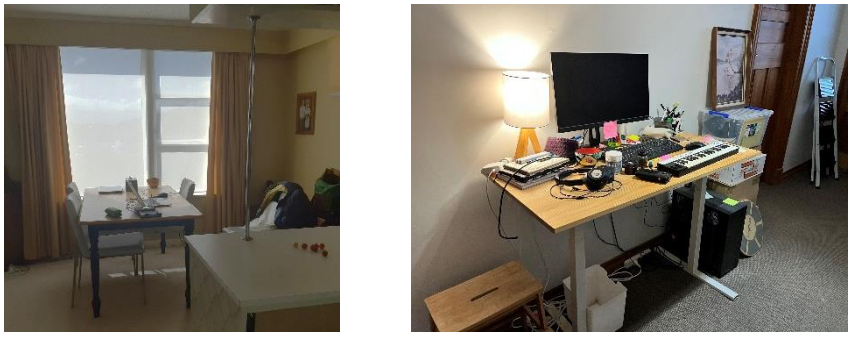


Figure 4: Alternative Workspaces Used by Participants

The quotes below have been extracted from the transcribed interview data.

> "Sometimes, I'll have a meeting that doesn't require much attention, so I might sit in bed and work. I have a little setup on my bed with a small table and all my plugs."

> "The living area is large and bright, with windows on all four sides. It also has a heat pump, so the temperature is comfortable throughout. On the other hand, the small room is where I go when I need to focus or use the second monitor."

> "The only other space is a desk in the hallway, which is used for some work."

As illustrated in Figure 4 and the quotes above, several participants described shifting work locations within the home in response to comfort, lighting, temperature, or mood. This spatial mobility reflects a dynamic engagement with the home environment that contrasts with the fixed nature of conventional office setups. A key theme emerging from participant interviews is the multi-functional use of domestic space. This approach reflects a flexible mindset toward the spatial boundaries of work.

Overall, these findings show how remote work pushes against the usual boundaries of the home, with people having to manage and rethink how different spaces are used in real time. This ongoing process shows a growing ability to live and work more flexibly. Instead of seeing the home as a fixed place with set roles, it has become something more fluid as an evolving, shared workspace that is constantly being adjusted and negotiated.

The participant quoted below, who previously had a separate office and now works from home full-time, reported increased stress levels from being able to see their work area from bed, which disrupted their ability to mentally "log off." To address this, the participant began using a folding screen to create a visual barrier and separate the workspace from the rest of the room.

> "To separate work from home, I have a room divider that I use. So, when I'm done for the day, I close the divider and tell myself, "That's it."

Another interesting finding is that participants created work zones through mental strategies rather than physical barriers, such as positioning their desks to face a window, using headphones to minimize distractions, and keeping their phones away from their work areas to maintain focus when they are working in a shared space. Overall, the dynamic use of alternative spaces within the home offers greater adaptability and resilience than traditional office environments, which are often constrained by standardized layouts, lighting, and temperature settings.

4.2. User-Driven Resilience

User-driven resilience is closely related to how individuals tackle the challenges of working from home by modifying their behaviors. Unlike a traditional office setting, this resilience stems from personal preferences, limitations, and creative problem-solving. In this study, participants showcased a variety of strategies to enhance their workspaces, making them more functional, comfortable, and emotionally supportive.

4.2.1. Furniture Adaptation

Furniture can be considered a key element in how participants shape their home work environment. In traditional office settings, furniture is typically standardized and aligned with ergonomic principles. However, work setups at home reflect a wide range of adaptations, improvisations, and user-driven modifications. Most participants either selected, modified, or repurposed their furniture to suit their requirements. These decisions were influenced not only by functional needs but also by convenience or improvisation, personal aesthetic preferences, emotional comfort, and daily routines, factors that are often overlooked in a typical office setting.

Figure 5: Multipurpose Office Setups

Figure 5 illustrates the workstations of some of the participants who use a multipurpose work environment when working from home. None of these participants have a designated office room, and the images clearly show the absence of permanent office setups, such as desktops or monitors. This suggests that these spaces are intentionally designed for dual-purpose use, allowing them to be easily converted for non-work-related activities. Furthermore, the nature of their work appears to be compatible with using only laptops rather than multiple screens, supporting a more flexible and adaptable workspace arrangement.

The quotes below have been extracted from the transcribed interview data from the participant who use Bureau Display Cabinet/Secretary Desk for work.

> "I would always work from a laptop on the dining room table up in the house; just recently, I have inherited this beautiful walnut antique writing desk. I put it in the living room, and I can use it as a standing desk on top with my laptop, and as a writing desk."

This participant has made a unique adaptation of an antique piece of furniture by transforming it into a modern workstation. She explained that she inherited this Bureau Display Cabinet/Secretary Desk from her mother and placed it in her living room, where it fits perfectly. Although her husband had previously built her a basement office, she found that space unappealing and often worked at the dining table instead. However, after acquiring this antique desk, she decided to use it for her work and was quite happy with the change. This example illustrates how workspace decisions are shaped not only by functional needs but also by aesthetic preferences and emotional comfort.

4.2.2. Ergonomic Improvisation

Participants employed a range of informal strategies to address physical discomfort in their home work environments, often without access to formal ergonomic support. These findings align with broader concerns in New Zealand, where computer-based work has been identified as a significant contributor to upper limb musculoskeletal disorders (Harcombe et al., 2009). Several adapted their setups using everyday items such as books to elevate laptops, mouse pads to reduce wrist strain, or additional cushions to improve seating comfort. The following quotations illustrate some steps taken to improve comfort and reduce physical strain.

> "I make sure to get up frequently. It helps prevent pain from building up. I did have some wrist pain, but it turned out to be because my mouse was hitting the edge of the desk. It caused some discomfort, but a mouse pad solved the problem."

> "I'm a gym addict, so I go regularly. If I were the person I was four years ago, when I didn't exercise, I might have had issues with my back. But now, I'm fine as long as I sit for a short time. Sometimes, I place a pillow behind my back to support it, and it helps with the discomfort. But for long periods of sitting, I need to sort this out. I also use books or anything I have around to elevate my laptop. If I don't, my neck starts hurting. I need to adjust things to make it work for now."

Interestingly, participants made practical adjustments such as purchasing ergonomic furniture or modifying their physical setups and acknowledged the role of lifestyle choices in managing their health and well-being while working from home. As highlighted in the final quotations, factors like incorporating regular exercise and adjusting daily routines can play a significant role in alleviating discomfort. This suggests that achieving ergonomic comfort is a multifaceted process involving environmental modifications and personal habits.

When asked about improvements or adjustments to their workspace, many participants reported investing in ergonomic furniture and accessories, such as ergonomic chairs, adjustable desks, and multiple monitors, to create a more comfortable and efficient setup.

Future research could benefit from observational studies that explore how participants interact with their workspaces including posture, movement patterns, and how different setups support or hinder comfort offering deeper insight into how remote work environments can be better designed and supported.

4.2.3. Light Access, Control, and Preference

Numerous studies have highlighted the significant benefits of access to natural light and views in work environments, which can influence outcomes like productivity, job satisfaction, and overall health. Shishegar and Boubekri (Shishegar & Boubekri, 2016) showed that daylight exposure improves mood, alertness, and focus and reduces fatigue and stress, linking natural light to better cognitive performance. In the context of this study, participants were asked whether their home workspaces had access to natural light. Although natural lighting offers significant employee benefits, research suggests (Turan et al., 2020; Mustafa, 2024) that many office spaces may lack adequate daylight or provide limited control over lighting, particularly in conventional office setups.

Of the 30 participants, 29 reported having at least one window in their primary workspace. This finding suggests that window accessibility is a prevalent feature in WFH environments. During the interviews, many participants mentioned that when arranging their workstations, they considered window placement to maximize natural light and maintain an outside view.

To evaluate participants' control over lighting in WFH settings, the use of curtains, roller blinds, and other shading devices was examined. All participants reported some degree of control over natural lighting, allowing them to adjust brightness levels as needed. Many relied on standard curtains or roller blinds and, during interviews, emphasized their preference for this flexibility in managing their work environment. Compared to traditional office settings, WFH setups offer greater autonomy in controlling natural light.

90% of participants expressed a strong preference for incorporating natural light into their home workspaces. When asked about their thoughts on natural light in their workspace, these participants provided overwhelmingly positive responses, highlighting its beneficial effects on their mental well-being and overall productivity. Many described how exposure to natural light contributed to a more comfortable, pleasant, and motivating work environment.

4.2.4. Aesthetic and Emotional Personalisation

Having control over one's workspace whether through layout, furniture, view orientation, or even colour choice emerges as a critical factor influencing satisfaction, productivity, and well-being. The ability to personalize, arrange, and manage the home work environment allows individuals to create a sense of spatial identity and psychological grounding (Lengen & Kistemann, 2012). This contrasts with traditional office spaces, where environmental features are typically standardized and externally controlled. For remote workers, the autonomy to shape one's workspace becomes a crucial aspect of the home-based work experience. The following quotations illustrate how participants engaged in aesthetic and emotional personalisation to create workspaces.

> "We've been going on Pinterest and the internet, looking for ideas to visualize and bring to life. One thing we spent a lot of time on was searching for study ideas. Even little touches, like having everything in rainbow colors, really make the room feel special."

The participant quoted above spent considerable time designing the entire room thoughtfully, collaborating with their partner, who also works in the same space. Together, they considered the layout, storage, and display options, incorporating pop culture collectibles and arranging their books in rainbow order.

> "For me, there are two things I need: warmth and good light. I've specifically chosen where my desk is in the house so I get morning light. Even on a gloomy day, when I sit at my desk, it feels bright and inviting. We recently painted the room, and I even picked an orange wall to make the space energizing. It's funny, it's the first time I've really thought about how my workspace decor affects how I feel."

For some participants, this meant adding a brighter color to the walls to make the space feel more alive. Others introduced personal touches, such as artwork or plants, which brought a sense of personality to their workspaces. In this way, user-driven resilience was expressed not just through practical adjustments, but through carefully considered, emotionally grounded choices that made home workspaces feel both functional and meaningful.

5. Discussion

This paper has examined the changing role of domestic space in the post-pandemic context, offering insights into how the home can be resilient in terms of spatial and user-driven terms. Typically, a contemporary residence is designed for living rather than working, but these findings reveal a high degree of adaptability in how people have used and modified their living spaces for work, often in ways that blurred conventional boundaries between domestic and professional life.

Participants adapted to remote work by creatively transforming everyday home environments into workable office spaces and, at the same time, adjusting their behaviours, routines, and surroundings through small, practical changes to maintain comfort, productivity, and a sense of control. These adaptations open up a discussion on how housing can be shaped by the user to accommodate WFH in ways that differ significantly from conventional office settings. It also highlights the adaptability of the home in response to large-scale societal disruptions such as the COVID-19 pandemic and to shifting social, economic, and environmental demands. As remote work became more widespread after COVDI-19, the ability of housing to support multiple roles is critical in the broader context of urban resilience.

However, there are some limitations to the study. As an exploratory study, the findings should be interpreted as indicative rather than representative of New Zealand households. The sample was limited to the 30 participants primarily from Wellington, New Zealand, which will also constrain the generalizability of the findings. These adaptations and forms of resilience may vary across different cities, countries, or cultural contexts, where housing types, work practices, and social norms might differ. Future research could also investigate potential inequities in housing tenure and their implications for the ability to create resilient home workspaces. Data is based on the semi structured interviews and it may reflect subjective interpretations. Additionally, the study is cross-sectional, with data coming from a population at a single point in time, which limits insight into how these adaptations might evolve or endure over time. Despite these constraints, the paper offers valuable insight into how people shape environments within the everyday realities of their homes.

6. Conclusion

This paper has explored how resilience in changing circumstances at the scale of the home is revealed through spatial and user-driven adaptations in response to remote work, following the COVID-19 pandemic. While working from home is not a new concept, the sudden and widespread shift during the pandemic forced many households to reimagine how home could accommodate both living and working functions. Through interviews and visual analysis of home workspaces across New Zealand, the research revealed how this adaptability is not solely structural but is continuously negotiated through everyday decisions ranging from spatial layout and furniture use to behavioural patterns and personalisation.

Findings show that individuals demonstrated high levels of adaptability in creatively transforming their homes, making flexible, multi-functional environments that support their remote work needs. These forms of resilience, while often subtle, reflect a broader shift in how homes are not just places of living, but are evolving environments capable of absorbing change and supporting new demands. However, this adaptability was not without challenges. Some participants faced restrictions such as limited space, shared environments, inadequate

furniture, and difficulties maintaining work-life boundaries. These findings emphasize the need for flexible and responsive housing design that can accommodate these emerging and future needs in the urban design context.

Designing for resilience needs to not only consider the adaptability of the physical space but also support the requirements of those who occupy and shape these spaces.

As this study provides a starting point for understanding current practices, future research should expand to a broader New Zealand context and to other geographical settings worldwide. Such work should use more diverse sampling across regions and occupations to capture a wider range of experiences, and employ longitudinal approaches to track how home workspaces and resilience strategies evolve over time.

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