

PRODUCTIVE WORKSPACES & THE BENEFIT OF INTELLIGENT ERGONOMIC DESIGN



INTRODUCTION

This paper presents the case for intentional architectural design and construction of productive workspaces. The workspaces of today may be set in either commercial environments or domestic live/work settings and whatever the setting the need to maximise productivity and better understand the drivers for it remains key to its purpose.

It specifically addresses all those involved in the design and specification of productive workspaces in commercial or live/work settings be they corporate or small medium enterprise business owners, architects, interior designers, space planners or even end user consumers.

Around the world, the relevance of productive workspaces in the domestic live/work market is heightened at this time as advances in digital technology, and the rise of remote working enable more to desire to, or have to, work from home.

DEFINITION, HISTORICAL OVERVIEW AND CURRENT CONTEXT

A productive workspace is a space created for people to do productive work, whether away from the home or as part of a live/work environment.

HISTORICAL OVERVIEW OF PRODUCTIVE WORKSPACES – FROM 1726 TO THE PRESENT DAY

In 1726, the British Royal Navy opened The Old Admiralty Building in London, which is often cited as the first office building.

Technological drivers

After the invention of telecom devices such as the telephone by Graham Bell in 1876 the office workspace trend escalated. Thanks to these technologies, manual 'blue collar' workers and 'white collar' counterparts could work separately without having to rely on a slower postal service for communication. Factories and offices could now, for the first time, be separate entities. Although these structures bore little resemblance to the workplaces of today, they were the first buildings constructed solely for the purpose of office work.

Open plan workspaces and "Taylorism"

Open plan workspaces are often attributed to the workplace philosophy of Frank Taylor. Taylorism, as it came to be known, concerned itself with creating workspaces that maximised productivity and efficiency. However spatial variety was based

on employee hierarchy. There were large open areas lined with partition-free desks for most workers, while senior staff were given private offices.

Burolandschaft and the rise of smaller team based workstations

Evolving out of Taylorism, the early 1960s saw workplace design better reflect the needs of employees. This shift started in Germany, hence the name burolandschaft, meaning 'office landscape', but quickly grew popular around the world. The originators of this design philosophy, Eberhard and Wolfgang Schnelle, sought to create offices that worked for workers, and therefore work better for businesses. Smaller team-based workstations, temporary screens and plant life gave workspaces a more natural feel.

CURRENT CONTEXT OF PRODUCTIVE WORKSPACES – SHIFT TO AGILE WORKING AND THE NEED FOR VARIETY THROUGH PERSONALISABLE, FLEXIBLE SPACE

As the culture within workplaces shifts with each successive generation, so does the way in which they achieve optimum productivity. The concept of agile working is based around the opportunity for employees to work in a space that will fit them best and therefore maximise their productivity.

A 2019 survey by Harvard Business Review "*What employees want most from their workspaces*" confirmed that what employees sought most from their workspaces was better air quality, access to natural light, and interestingly the ability to personalise their workspace.

Others say that employees feel most productive when they have control over their work environment. Adjustability and variety contribute to keeping employees happy and productive as there is no one-size-fits-all mould that can adequately be adjusted to the range of jobs and worker preferences there are.

Another point is that often when presented with light, sociable, open-plan workspaces, people now actively seek out cosy, quiet corners free of distraction. Variety is one of the most important trends in office design today aligned with the gradual shift towards agile working for all workers, whether at director or junior level, becoming the cultural norm, in Australia and beyond. By variety this means not only variety across a floor plate but flexibility within a specific work area itself, including down to the level of the end user and the nature of his or her desk used for a particular purpose.



EXPLANATION

Productive workspaces contribute to keeping not only employees, but their employers, from corporate business owners to sole traders, not only productive but happy in their work. This can reduce the likelihood of adverse behavioural trends such as absenteeism, uncollaborative, unproductive and unergonomic working habits and ultimately lead to improving the work/life balance, wellbeing and health and safety of those using them.

MEETING REGULATORY REQUIREMENTS

In Australia as elsewhere, the design of productive workspaces and the furniture they contain requires the navigation of a variety of regulations, standards and guidance. The core components relating to Australia are outlined here:

Workspaces

- The *Workplace Health and Safety Act*² outlines the duties relating to workplace health and safety
- The *National Construction Code of Australia*³ including the *Building Code of Australia (BCA)* and related building laws in each jurisdiction (state or territory) govern building construction
- *Mandatory Standards* are referred to in legislation (law)
- Guidance material (*Codes of Practice (COP)* and *Non-Mandatory Standards*) provides guidance on how to implement the legislation. This includes industry-specific safety standards and guidance material produced by the regulators and industry.⁴ Compliance with this is mandated unless the same or better is achieved

Furniture products

- DIN EN ISO Standards:⁵ DIN is a national standards body that represents German interests in European and international standards organisations and was developed by experts with the aim of arriving at a common standpoint taking the state of the art into consideration
- GS tested safety certification : The Geprüfte Sicherheit (“Tested Safety”) or GS mark is a voluntary certification mark and indicates if technical equipment meets German and, if available, European safety requirements. It is based on the German Product Safety Act (“Produktsicherheitsgesetz” or “ProdSG”)
- Lifting column testing : Lifting column tests involve testing the lifting capacity of telescopic desk columns
- Sustainability controls : Electricity consumption, resource minimisation and recyclable content are sustainability parameters
- Endurance testing : Endurance tests involve testing a system with a significant load over a significant period of time, to discover how the system behaves under sustained use

CHALLENGES OF PRODUCTIVE WORKSPACE DESIGN

According to a 2015 survey by Deloitte 87%⁶ of organisations cite culture and engagement as one of their top challenges to productivity, but almost two-thirds of executives do not feel they are effectively driving this desired culture within their business.

On top of this, nearly 80% (76%)⁷ of Australian workers are unsettled about their jobs, or worse still, are completely disengaged. This can lead to them being not only less profitable, but also less loyal, less safe and less innovative.

THE CHALLENGES OF PRODUCTIVE WORKPLACE DESIGN

Enabling Profitability:

Where employees are engaged with the workspace they achieve over 200% higher results⁸ but contemporary workspaces are currently built around predominantly a one-size-fits-all approach. A workspace is generally reviewed as a capital 'fit-out' cost based on the m² or ft² rather than from the position of seeing workspace design at the user level as a driver of economic performance.

Fostering Loyalty:

Loyalty⁹ is created through universal worker acceptance and understanding of a company's vision, mission and objectives and brand. Additionally, workspaces that engage workers tend to see less absenteeism (which also contributes to a more productive workforce). There is a strong cultural, user-centric aspect of workspace design that is often overlooked and that can directly improve loyalty.

Increasing Safety:

Workplace safety¹⁰ falls into two categories, physical safety and emotional safety. The importance of the latter is less well known. Nevertheless, when it comes to designing emotional safety into the built environment, there really are no formal guidelines, but holistic workplace design, centred on improving worker wellbeing, can reduce poor behaviour and foster a psychologically safe and healthy work environment.

Keeping Innovative:

While it is well known that physical activity helps us have quality sleep, fundamental for good daily productivity, it is the forward-thinking businesses that incorporate more innovative¹¹ opportunities for exercise into the office, not only in break-out zones, gyms and the like but also through provision of sit-stand furniture options.



HOW TO CREATE A PRODUCTIVE WORKSPACE

The science of intentional design¹² can turn any work environment into a holistic experience.

With a flexible workspace, people can choose the working environment that best suits the task to be accomplished, whether alone, in a small group or larger meeting or conference. A modern, agile workplace embraces flexibility. By offering both spatial and furniture choice within it, people can curate their environment to specific tasks they are trying to accomplish. For tasks that require more concentration, a quiet and comfortable space to focus might be preferred. If a brainstorming session or another type of creative group task is necessary then a more relaxed, social environment could provide better results. These may include stand-up meeting locations.

Organisations and business owners have the power to make improvements in these areas, and need to, not just for their workers but for themselves and their organisations as a whole – particularly in the field of workplace design.

Workplace design strategies – valuing ergonomic design

Studies by the Victorian Health Promotion Foundation¹³ in 2012, still relevant today, grouped workplace design strategies in five categories: four of which were distinct strategies, three of which relate to ergonomic aspects, and one that used a combination of strategies.

1. increasing the number of breaks from sitting time
2. implementing strategies around postural change
3. focusing on ergonomic changes to the individual workspace
4. altering the built design of the broader workplace
5. using multiple strategies (combinations of the strategies outlined above)



CONCLUSION

Productive workspaces are important and intelligent workspaces that feature ergonomic design are favoured as they can assist in improving productivity and fostering loyalty among employees, while improving safety and being innovative.

HETTICH

Hettich is one of the world's largest manufacturers of furniture fittings and develops intelligent technology for furniture. A family-owned business, established over 135 years ago, Hettich is based in Kirch lengern, Germany.

Benefits of Legadrive Systems

DIN EN ISO Standard approved and GS marked LegaDrive Systems¹⁴ address concerns to boost work productivity in the long term in multiple ways through the following characteristics:

- well-being: their ergonomic design helps keep staff in good health
- productivity: their use assists in reducing the number of workdays lost through sickness
- flexibility: they provide individual workers with more storage space and greater design flexibility
- strong: once produced, a LegaDrive lifting column undergoes stringent testing.
- sustainable: low standby consumption of ≤ 0.3 W; optionally, components are also available with a standby consumption of ≤ 0.1 W. In manufacturing the system's components, attention is paid to minimising the use of resources needed in production (energy in particular). Importance is also attached to selecting materials that can be recycled to the greatest possible extent at the end of the system's life.
- high endurance: endurance tested products provide many years of reliable operation, under climatic conditions with temperatures ranging from 5° to 40° C and relative humidity from 5 to 85%.



REFERENCES

- ¹ <https://hbr.org/2019/08/survey-what-employees-want-most-from-their-workspaces>
- ² <https://www.australia.gov.au/information-and-services/health/workplace-health-and-safety>
- ³ <https://ncc.abc.gov.au/>
- ⁴ <https://www.safedesignaustalia.com.au/safe-design-legislation-regulation/nt>
- ⁵ <https://www.din.de/en/about-standards/din-standards>
- ⁶ <https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2015/employee-engagement-culture-human-capital-trends-2015.html>
- ⁷ <https://www.adecco.com.au/news/coping-with-australia-s-disengagement-epidemic/15671/>
- ⁸ "Elevate: Take Your Business to the Next Level" Balboa Press 2018 By Erik Therwanger ISBN-10: 1982213434
- ⁹ <https://hbr.org/2015/12/proof-that-positive-work-cultures-are-more-productive>
- ¹⁰ <https://www.ehstoday.com/safety/article/21919203/how-engaged-workers-are-safe-employees>
- ¹¹ <https://www.wework.com/ideas/office-design-space/how-innovative-offices-improve-employee-engagement/>
- ¹² <https://www.wework.com/ideas/office-design-space/real-science-behind-innovative-offices/>
- ¹³ https://www.vichealth.vic.gov.au/~/_media/ResourceCentre/PublicationsandResources/Economic%20participation/2012%20workplace/CHW_Sitting_Full_Web_Final.ashx
- ¹⁴ https://www.hettich.com/fileadmin/content/mediathek/OFC/LegaDrive_Systems_2015_14751_EN.pdf

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