



Editorial for Journal of Ergonomics 2017

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Editorial

In the UK absenteeism and presenteeism costs are about £100bn per year. According to BUPA absenteeism averages 9 days per year per employee causing a loss of £29mn in lost productivity. Musculoskeletal illnesses are the second biggest cause after mental health and resulted in 2016 with 30.8 million days lost which is about 22% of the total absenteeism. 1 in 8 suffer from some form of musculoskeletal problem arising mainly from limbs, back, repetitive strain injury or carpal tunnel syndrome.

In the book *Creating the Productive Workplace* published by Routledge dated 2018 (but available 2017) I and several contributors address the broad health and wellbeing agenda as it affects people working in buildings. It draws attention to the lack of awareness building design teams have on matters like ergonomics.

In one Chapter ergonomist Stephen Bowden concludes that some of the reasons that human issues may be pushed aside include:

The benefits of an ergonomics approach are not clearly understood by organisations. Human performance is seen as difficult to quantify in comparison to office construction and operating costs. Ergonomic and health and safety professionals tend to shy away from economic arguments.

He goes on to describe the misconceptions people about human factors are:

- *The design is satisfactory for me – it will, therefore, be satisfactory for everyone else.*
- *The design is satisfactory for the average person – it will, therefore, be satisfactory for everyone else.*

The variability of human beings is so great that it cannot possibly be catered for in any design-but since people are wonderfully adaptable it doesn't matter anyway.

Ergonomics is expensive and since products are purchased on appearance and styling, ergonomic considerations may conveniently be ignored. Ergonomics is an excellent idea. I always design things with ergonomics in mind-by a do it intuitively and rely on my common sense so I don't need tables of data or empirical studies.

In a later Chapter ergonomist Veele Hermans concludes:

Although office workplaces changed considerably over time sustained seated work, mental overload and physical problems still appear today. It is a challenge for project developers and architects to integrate ergonomics knowledge in their future developments. Doing so, ergonomics could indeed foster the creativity of all workers.

Ergonomics is a form of human centred holistic design in which the interaction between the person and the building systems and interiors is taken into account as detailed in ISO 13407:1999 on *Human-centred design processes for interactive systems* and revised as ISO 9241-210:2010. Human variability in body size, mind and sociability have tended to be ignored and dismissed as being too complicated but individual differences are the things that help to give meaning and understanding and with the arrival of wearable technologies we can now measure these more easily so giving another rich source of data on how body and mind are reacting in different situations.

Attaianese and Duca (*Theoretical Issues in Ergonomics Science* 2012 13:2 187-2020) state in their conclusions:

The Ergonomic approach is aimed to optimise human interactions with systems, in order to make human activities more efficient, safe, comfortable and satisfying. Built environments influence people's everyday life because all human activities are executed in a built space. In this framework, architectural design can be enhanced by the consideration of human factors perspective, because it gives the cultural and practical references to envisage how technical solutions can fit the environmental needs derived from people's life and work activities they perform.

ISO 9241-11, now a multipart standard under Ergonomics of human interaction, describes *Workplace Ergonomics* and *Environmental Ergonomics* in the 500 and 600 series respectively. The International Ergonomics Association brings together 42 individual ergonomics organisations from around the world and is an important point of reference.

It is hoped that ergonomic considerations will become a normal part of the initial building design process and will also be included in post-occupancy evaluation studies of buildings of all types.