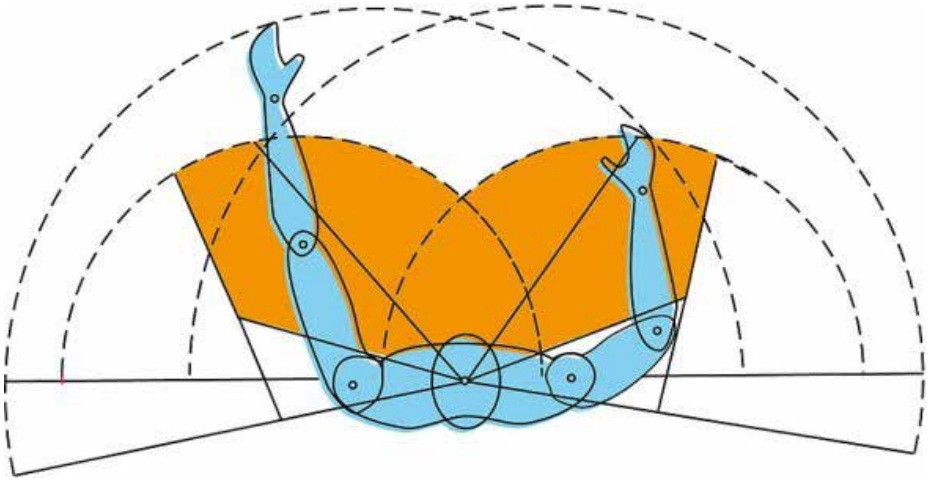
BY ALEXANDRA STINSON

INCLUSIVE DESIGN

Accessibility and ergonomics fit together naturally, both focusing on accommodating the human form, regardless of ability. Alexandra Stinson shows how to integrate their principles into renovations and new construction for AODA compliance with a case study



As of this year, anyone who is considering renovating or constructing a public space must meet new building code requirements — namely, new accessibility anthropometrics.

Anthropo-what? Dictionary.com defines anthropometry as the measurement of the size and proportions of the human body. These measurements range from sizes (i.e. height or reach) to functional abilities such as grip strength, and in this case incorporates measurements from populations of disability (i.e. wheelchair dimensions, etc.). Ergonomics naturally incorporates accessibility needs in its principles using anthropometrics. At the heart, ergonomic principles are designed to improve function and overall fit, including for people with disabilities.

Not only is it socially responsible, but it also makes financial sense to encourage ergonomic design. Whether it is to comply with the Accessibility for Ontarians with Disabilities Act (AODA) or to help with a company's continuous improvement strategy, an ergonomic design fits the bill (literally).

AODA inspectors and auditors have hit the road, inviting corporations to show them what they have in place to meet Ontario's 2025 deadline for going barrier-free. Many companies that maintain public spaces are scrambling to submit compliance reports and ensure their documents are up to scratch. Many are also struggling to keep up.

Some companies are afraid to undertake a more ergonomically integrated redesign, thinking that regulations and new equipment will drive up costs. However, according to the Workers Compensation Board of Alberta, studies have shown that one carpal tunnel syndrome claim in an office environment can cost a company up to $12,000. Additionally, a non-compliance fine from an AODA inspector can range from $200 to $2,000 per day for an individual. Inspectors can also fine a corporation, at an average of $50,000 to $100,000 per day of non-compliance. With numbers such as these, one claim or fine could easily exceed the cost of designing an accessible, ergonomic workstation or space.

In addition to complying with the AODA, there are also potential economic benefits to improving the accessibility of a space. Current statistics place only 54 per cent of people with disabilities in the workforce, as opposed to 80 per cent of people without disabilities. The Martin Prosperity Institute estimated in 2011 that even a modest improvement in the number of persons with disabilities who can enter the workforce would add $4.1 billion to Ontario's GDP, as John Michael McGrath reported on TVO's Inside Agenda Blog.

The question becomes: How can companies, municipalities and public work areas effectively integrate compliance measures into their building plans? For one transit company, which chose to redesign its ticket sales kiosks, this meant considering the following factors:

- How did the Built Environment Standard affect the public space?
- How did the workstation design affect its workers?
- How could the company improve customer service?
- How could the company integrate new technology?

Each of these four elements held equal weight in the corporate business plan; sacrificing one would have meant compromising on

legislative compliance, claim costs, accommodation ability, or sales and/or productivity. Here are some insights into the company's process:

HOW DID THE BUILT ENVIRONMENT STANDARD AFFECT THE PUBLIC SPACE?

The AODA and Built Environment Standard are fairly clear on how to ensure area accessibility. The biggest challenge for most is physical space. The distances, radiuses and parameters required to allow easy mobility for wheelchairs and assistive mobility devices may demand a larger footprint than what was originally allocated to a renovation or new build project.

At this stage, education is key. Ensure that the real estate allocated to the renovation or build can accommodate the new built standard components. It's far costlier to increase square footage after the fact, so the case study company did its homework and ensured that the accessibility requirements were accounted for at the drawing/design stage.

HOW DID THE WORKSTATION DESIGN AFFECT ITS WORKERS?

The second challenge came in ensuring that any design changes to make the workstation more accessible and compliant with the Built Environment Standard would still work well for employees. Design parameters such as counter overhang to allow for leg clearance of a wheelchair/scooter caused increased reaching distances for the customer service employee.

These types of issues were brought to the ergonomist while in blueprint mode. The design changed multiple times on paper, as new elements were implemented or removed, to ensure a balance between the accessibility of the public and the ergonomics of the staff.

HOW COULD THE COMPANY IMPROVE CUSTOMER SERVICE?

There is no sense denying that revenue and productivity are critical to corporate success. It was imperative to both the company and its customers that every design change considered production/quota impacts to ensure a positive outcome.

Efficiency is always key and this is where ergonomic principles shine. A sound ergonomic design should improve bottom line numbers, not just with decreases in injuries and claim costs, but also with increases in productivity due to more efficient work practices with nominal to no negative effects on the body.

A perfect example in the case study was reach distances to accept payment and pass information back and forth to the customer. Reaching farther than 50 centimetres caused poor body postures and potential injury for the shoulder and back; it also took longer. By ensuring that counter depths and leg clearance requirements kept reach distances close to 25 centimetres, the company was able to boast improved ergonomic design and demonstrate an estimated 0.3-second increase in productivity.

HOW COULD THE COMPANY INTEGRATE NEW TECHNOLOGY?

With the rapid pace of advances in technology comes more gadgets, cables, screens and equipment (often bigger or smaller than ergonomists would like). All are needed to stay current with public demand for convenience and usability; however, there is only so much room in an employee's workspace. Organizations can overcome these challenges with creative design that pairs technology with ergonomic accessories such as monitor arms, venting and brackets.

Ontario's new accessibility standards move corporate mandates in a more socially responsible direction. Incorporating ergonomics into a well-mapped-out strategy makes complying with the new requirements less overwhelming and benefits all parties, including the company via the bottom line. | **CFM&D**

Alexandra Stinson is a Canadian Certified Professional Ergonomist (CCPE), Registered Kinesiologist (R.Kin.) and co-founder of PROergonomics. She has assisted in providing cost-effective ergonomic solutions to her clients for more than 15 years. She can be reached at astinson@proergonomics.ca.