altro

ENHANCING PATIENT AND STAFF WELLBEING
USING DESIGN

asf.com.au

“Unnecessary noise is the most cruel abuse of care which can be inflicted on either the sick or the well,”

Florence Nightingale - Notes on Nursing Book 1859.(1)

Fast forward to 2017 and our environments are even noisier. With technology accelerating we have more beeps, bleeps and buzz than ever before. Without even realising it this noise and our surrounding interiors has an impact on our health and wellbeing.

Decibels can be used to compare various different things, such as sound, or electricity. But fundamentally, what is being compared is always related to some form of power or energy, in this case, sound.

It is measured using a logarithmic scale:

- The smallest audible sound (near total silence) is 0 dB.
- A sound 10 times more powerful is 10 dB.
- A sound 100 times more powerful than near total silence is 20 dB.
- A sound 1,000 times more powerful than near total silence is 30 dB.

Common Sounds and their dB ratings:

- A Whisper 15dB
- Normal Conversation 60dB
- A Lawnmower 90dB
- A Car Horn 110dB
- Rock Concert or Jet Engine 120dB
- Gun Shot or Firework 140dB

The World Health Organisation suggested in their 1995 hospital noise guidelines that sound levels in patient rooms should not exceed 35 decibels. Noise in hospitals is well above the recommended figures.

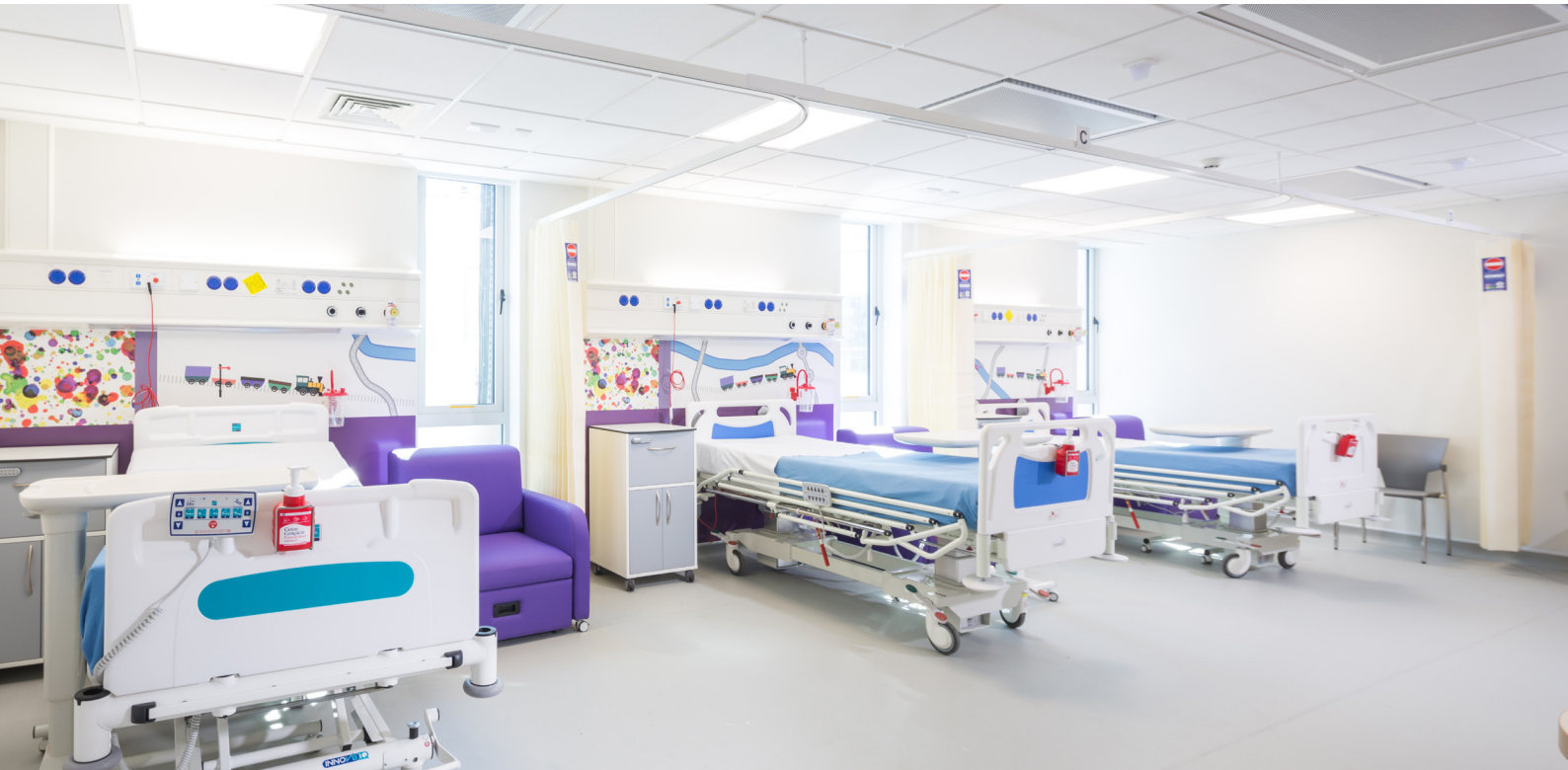
The average sound levels in a hospital during daytime hours has risen from 57 decibels in the 1960s to 72 decibels. At night the change is from 42 decibels to 60 decibels, affecting the sleep of people who need it the most - those who are unwell. The World Health Organisation suggested in their 1995 hospital noise guidelines that sound levels in patient rooms should not exceed 35 decibels. Noise in hospitals is well above the recommended figures.[2]

Noise levels can have a serious impact on the wellbeing of patients, staff and visitors in a hospital environment. A number of affects noise levels can have include: elevated blood pressure and sleep deprivation among patients, as well as staff experiencing emotional exhaustion and burnout.

In environments such as NICU, noise reduction is especially important. High noise levels have been linked to elevated blood pressure, increased heart rate and respiration rate and sleep deprivation. It also decreases oxygen saturation resulting in the need for oxygen support therapy. There has also been some studies where noise has been linked to a negative impact on the healing process.

Hospital machinery, equipment, nurse pagers and other devices are a large source of noise pollution. Hard interior surfaces including floors, walls and ceilings are also another major acoustic issue; as a hard surface they can reflect rather than absorb sound. This causes noise to bounce around, overlap, echo and reverberate. Reverberation causes noise to prolong and echo in the environment, meaning it takes longer before the sound stops.

These sound reflecting surfaces cause noise to travel down corridors into other rooms and extend considerable distances. The resulting lingering sound can affect patients, visitors and staff over larger areas.



A positive sound environment occurs naturally outdoors; our ears are tuned to the natural environment, and the sky absorbs noise.

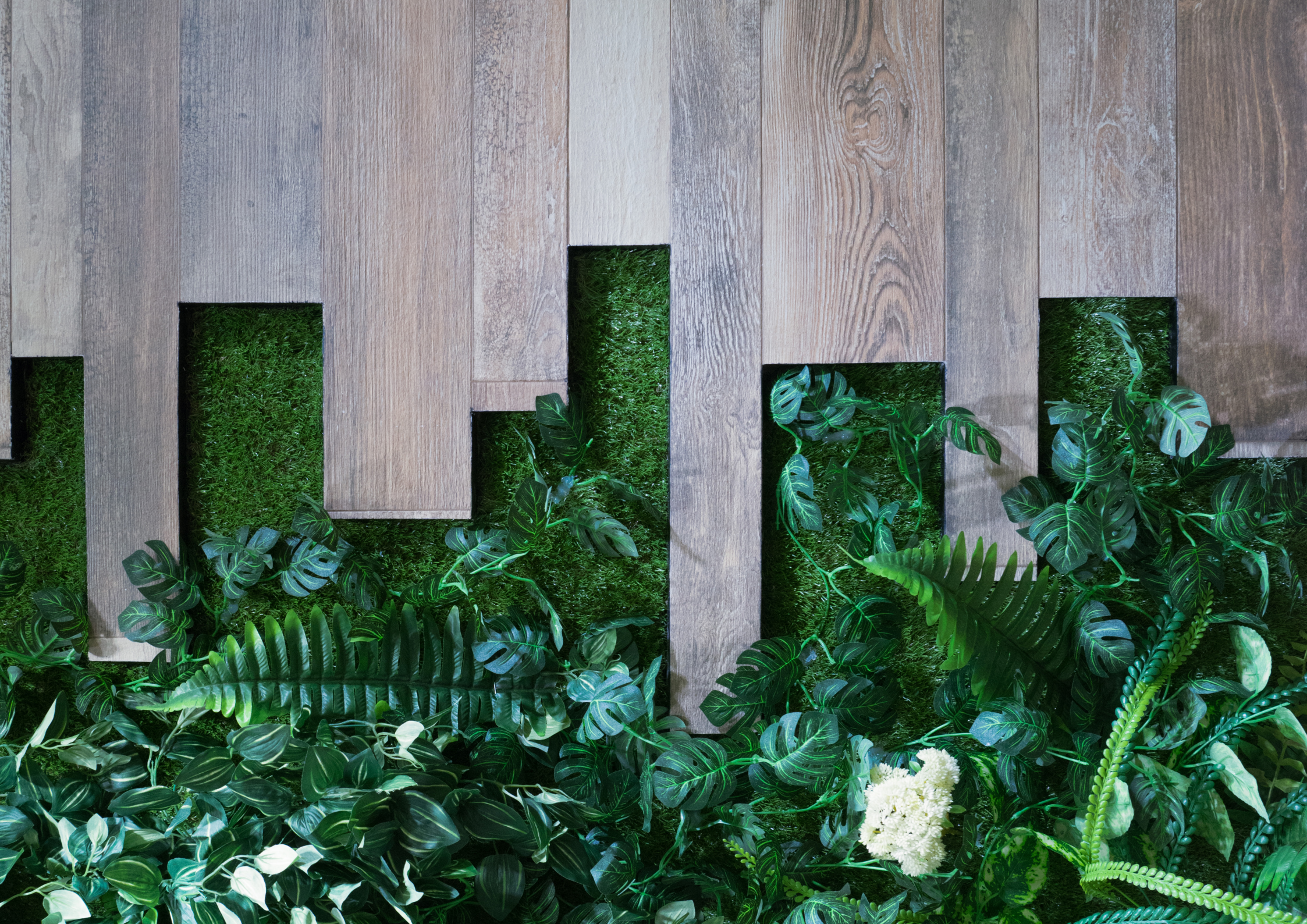
We need to create the same indoors, absorbing or diffusing noise to help support a healing environment.

A vinyl acoustic floor contributes to the reduction of noise in buildings and provides an impact to sound reduction. It helps by:

- reducing sound transmission
- increasing sound absorption
- reducing sound reflection

Not only does a floor impact the acoustics of an environment; it also impacts a person's comfort. Especially hard-working healthcare staff who are on their feet all day. It is important for floor surfaces to provide comfort underfoot whilst maintaining ease of movement. Some softer floors may cause indentation and rolling load resistance. This can be especially common in healthcare where machinery, beds and other equipment are being moved throughout the facility frequently.

It is important to choose a floor that has great sound reduction but also high indentation resistance and resistance to low rolling loads.



To encourage serenity and calmness, healthcare facilities should be as peaceful and pleasant as possible. Biophilic design, a strategy of implementing nature into the environment, can help.

The biophilia hypothesis suggests that there is an instinctive bond between human beings and nature. Edward O. Wilson introduced and popularized the hypothesis in his book, Biophilia (1984). He defines biophilia as “the urge to affiliate with other forms of life.” It has since been expanded to include all forms of the natural environment, from plants and trees to rocks, sand and earth.

The benefits of biophilic design are clear. Studies have shown that exposure to nature and natural images can help with the healing process, reduce absenteeism, increase productivity and improve mood.

In healthcare this is of exceptional importance. Patients who had windows which overlooked natural sceneries were able to go home after 7.96 days, compared to the 8.71 days it took for patients who had a view of a brick wall. (4) In terms of dollars and cents, this means patient care costs could have been reduced by as much $161,000 if patients recover just one day sooner. (5)

Green building programs like Green Star offer points for projects that take advantage of these types of design elements. For more information on designing for healthcare, see our whitepaper ‘Future proof healthcare with good design’.

References

1. Nightingale F. Notes On nursing: what it is, and what it is not. New York: Appleton; 1860.

2. "Rise in Hospital Noise Poses Problems for Patients and Staff, "Johns Hopkins University news release, November 21, 2005, <http://www.jhu.edu/news_info/news/home05/nov05/noise.html>.

3. Anjali Joseph, Ph.D., Director of Research, The Center for Health Design, Roger Ulrich, Ph.D., Professor, Center for Health Systems and Design, Texas A&M University, Sound Control for Improved Outcomes in Healthcare Settings (January 2007)

4. Ulric, 1984.

5. Machlin & Carper 2007.

6. Elzeyadi, 2011.

7. David Techau1, Buildings, Brains and Behaviour Towards an affective neuroscience of architecture: The Hedonic Impact of Sustainable Work Environments on Occupant Well being (World Health Organisation January 2016)

To find out more please visit our website

1800 673 441 (toll free) info@asf.com.au

asf.com.au