

## **Kingham S and Banwell K, 2019, Creating Sustainable, Resilient and Healthy Communities: Accident or Design? Air Quality and Climate Change, 53, 4, 11-12.**

Globally one of our greatest challenges, if not the greatest, is climate change. Well-designed cities, towns and neighbourhoods that encourage less motor vehicle use thus reducing greenhouse gas emissions, can help be part of the solution. In addition, if we design our communities well, we can also reap a number of co-benefits. For example communities that are less reliant on single occupancy private motor vehicle use:

- Have lower levels of air pollution from less vehicle emissions,
- Are more resilient to shocks and pressures such as earthquakes,
- Have healthier and happier people through improved physical health e.g. obesity, heart disease and respiratory disease and better mental health; and
- Are more socially and ethnically equitable as have better active and public transport benefitting people on lower incomes who have less access to motor vehicles and more reliance on other modes.

So what are the keys to success? How do we create sustainable, resilient and healthy communities? Is it by accident or by design? This paper examines these questions particularly focusing on two areas of research. The first is a study carried out as part of the MBIE funded Resilient Urban Futures (RUF) project (Banwell, 2017) that examined how communities in greater Christchurch responded and recovered from the Canterbury Earthquake Sequence 2010-2012. The intent was to understand what features of neighbourhoods enhance sustainability, resilience and wellbeing. The second is research from the Geohealth Laboratory, a collaboration between the New Zealand Ministry of Health and the University of Canterbury that delivers research at the nexus of geospatial science and public health to meet Ministry needs (see Bowie et al, 2013 for an earlier summary of some of its research).

### **Urban form**

Urban form is an important determinant of social interaction and strength of community (Banwell, 2017; Banwell and Kingham, 2016). The Resilient Urban Futures identified a number of different features of neighbourhood that were shown to influence and support social interaction. First, neighbourhoods with well-defined or well understood boundaries whether bounded by physical features such as rivers, hills, coastlines, or socio-economic settings, provided a sense of belonging of where people live. Second, having a centre or a clearly understood place to meet other was important; as one respondent said *"It's hard for people to engage with each other when you don't have a meeting place to come together."* The design of the street layout was also shown to be important. Noticeable differences were observed among different street types in fostering social connections, for example, more intimate streets such as cul-de-sacs, laneways and back sections, were viewed as aiding community development through the increased chance of social interaction. One respondent said *"I really think the type of street is important, the cul-de-sac behind us has been great for us."* Over the decades there has been a shift to homes with more private spaces, where garages dominate the street frontage of new homes and high fences between neighbours. Banwell (2017) describes how respondents negatively referred to automatic garage door openers and fences; *"People get into their cars and go to work and then come home press the little button for their garage door and they go inside to their private spaces never once turning around."* New subdivisions often lack large trees and also tend to lack walkability and local amenity, which can be associated with a reduced sense of community; as one respondent stated *"I just wonder how lonely some people are behind their private spaces"*. In contrast, many interviewed in older suburbs with narrow streets and a centre, positively referred to the amount of time it took to walk down the street as

they kept meeting people they knew, one person saying *"It can take a long time to get to the shops unlike the places with fences and garages."* Threshold spaces such as verandas and porches also found in the older style housing were described as contributing to providing social interaction with the street.

Neighbourhoods that were seen as safe, attractive and connected for walking had a stronger sense of community. One respondent said *"Because walking somewhere you see people and that is really important to us to see people and have that eye contact and being human together."* Another said *"Because you walk past you know your neighbours so I know most of the people on my side of the street."* One summarised the importance of walking with their comment *"If you have to get in your car it's not local."* Intrinsic to a neighbourhood being well designed for walking there is also the need to have destinations to walk to, whether, cafes, schools, libraries – all are places of local amenity. One talked of the value of local shops, saying how *"we don't have a name for them, given how important they are to everyone?"*

### **Traffic and streets**

Research has also identified the specific impact of traffic volume on neighbourhood social interaction. Appleyard (1980) was one of the first to find that in places with lower traffic volumes and traffic speed, residents knew more neighbours than on busier conventional streets. This was later replicated in California (Bosselmann et al, 1999), Bristol (Hart and Parkhurst, 2011) and most recently in Christchurch (Wiki et al, 2018). In all cases residents on streets with lower traffic volumes had more neighbourhood connections and community interactions, and they perceived their streets to be more liveable. The RUF project also specifically found that street width can have an influence on how well residents know others who live nearby; *"Our street is wide so we don't know each other."*

Increasingly, especially in Europe, street space is being shared. The early origins of this are best seen in the Dutch concept of Woonerf, where traffic speeds are reduced and road space is shared, not just prioritised for motor vehicles. In Barcelona, the Superblocks initiative (Mueller et al., 2019) involves closing selected streets to through traffic as part of a shift towards people-centred city planning. It has been estimated that annually almost 700 premature deaths could be prevented through the improvements in air pollution, noise, urban heat and physical activity, the Superblocks would result in. These types of shared space are increasingly being seen and restricting traffic and speed and access is being viewed favourably by residents, including in New Zealand (Kingham et al, 2019).

### **Spaces and places to meet**

The idea of spaces to meet and for social interaction arose during the Resilient Urban Futures work (Banwell, 2017; Banwell and Kingham, 2016). It identified those places where people had more anticipated interaction (*gathering spaces*) and those where the interactions were less formal or accidental (*bumping places*).

Gathering places are local places where purposeful or planned interaction can occur. These include places such as pubs, cafes and restaurants but also include libraries, swimming pools and parks. One respondent spoke of the importance of these as places of interaction when describing their suburb; *"It needs a better centre it has always needed a neighbourhood pub....see Heathcote Valley has rebuilt their pub and it's the centre of the community"*. This need for gathering places was also noted by Oldenburg (1989) who described the value of such places as a public setting that is accessible and often appropriate to those who live there, they are also often taken for granted.

Bumping places on contrast are also local but are places where unplanned or spontaneous interaction can occur. The term 'bumping' was used, unsolicited, by many respondents. One said *"Yes bumping into people is so important I think is what I like and that is what I connect with."* These

can include schools (usually primary), streets, local natural greenspaces and parks, local shops, and even street furniture such as a bench, or a shared street-side basketball hoop. One respondent said it was through community based equipment like a basketball hoop that they got to know their neighbours through their children playing there. Schools were referenced by most interviewed as important places to see and meeting others; *“Schools pop up constantly as bumping places for mums and sometimes dads too.”* Schools, where the primary purpose is to drop off or collect a child, provide a high chance of an interaction with someone from the local community. This was confirmed for many when the New Zealand Ministry of Education used the Canterbury earthquakes as a reason to close and re-structure Christchurch schools (they subsequently apologised for how this was done<sup>1</sup>). One respondent said *“The school was the only bumping place for Phillipstown and then the Ministry closed it.... The Ministry did not see the school as a community hub or the importance for the community,”* while another said *“Closing schools affects more than the school, it affects the whole community.”* Elderly people interviewed in Phillipstown described how they missed the sound of the children chatting and laughing on their way to and from school. It was an important part of their day, a time when they connected with their local community.

It is also important for people to know what is going on in their community. The #WellConnected project<sup>2</sup> has looked at the importance of local community in improving wellbeing (Epton et al, 2019). Part of this includes developing a map of local activities so that people know what is going on in their community. This project has found that this can be important to wellbeing.

### **Green space**

Green space, such as parks and trees, was also shown by the Resilient Urban Futures work (Banwell, 2017; Banwell and Kingham, 2016) to be important for community wellbeing. People talked about the value of nature and greenery adding to an intrinsic quality of place and were part of their everyday routines; *“Walking in Hagley Park every day and I do a bit of morning perambulation ..... an absolutely vital part of my life.”* For many, trees and parks held personal significance of such places as one interview said *“My trees, I know them by name.”* Parks with trees have been described as natural places to be alone, to meander and to meet others; while dog walking was seen as a way of connecting through walking to green spaces. Trees, particularly, were described as cherished features of the local environment and when absent this was clearly noted. This research is backed up by a series of quantitative Geohealth Laboratory projects that have shown the value of living near greenspace for both health through providing places for physical activity (Pearson et al, 2014) and also as places that facilitate good mental health (Nutsford et al, 2013). Further work has also identified the importance of bluespace (water e.g. sea, rivers, lakes) as a determinant of good mental health (Nutsford et al, 2016). Other features of the built environment have also been shown to negatively relate to health including alcohol outlets (Day et al, 2012), fast food outlets (Pearce et al, 2007) and gambling venues (Pearce et al, 2008).

### **The outcomes of sustainable, resilient, healthy communities?**

So, if we design communities using many of the features identified above, what happens? What are the outcomes of intentionally designed sustainable, resilient, healthy communities? Well, research tells us that we will have:

- Cleaner air due to less traffic leading to improved respiratory and cardiovascular health;
- Increased community resilience as neighbours are more likely to know each other better so have greater collectively efficacy ;

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<sup>1</sup> <https://www.stuff.co.nz/national/education/93921384/ministry-of-education-apologises-to-canterbury-schools-after-scathing-ombudsman-report>

<sup>2</sup> <https://www.wellconnectednz.org/>

- Lower infrastructure costs as we need less pipes and lines to supply denser communities, and less roads for traffic; and,
- Healthier and happier people. Charles Montgomery in his book 2013 *Happy Cities* identifies a range of, in some cases unusual, health outcomes from well-designed cities including:
  - psychotic disorders, including schizophrenia, are most common in neighbourhoods with the thinnest social networks,
  - the more connected when we are with family and community, the less likely we are to experience colds, heart attacks, strokes, cancer and depression,
  - connected people sleep better at night. They are more able to tackle adversity. They live longer. They consistently report being happier, and
  - low-density sprawl puts residents at greater risk of arthritis, chronic lung disease, digestive problems, headaches and urinary tract infections

## Summary

Research clearly shows that there are a number of key features of sustainable, resilient and healthy communities. They tend to have a diversity of housing types; low or no fences; plentiful green (and/or blue) spaces; close proximity to social infrastructure and facilities such as primary schools, shops, parks; good public transport; low volume and/or slow speed traffic; and environments and infrastructure that encourage physical activity.

To conclude, research has shown that place (geography) and streetscape affect communities (health and wellbeing) and that social infrastructure, that can create 'bumping' and 'gathering' spaces, are important for enhancing community and improving health. We also see that it is possible to design communities that encourage good outcomes; it does not happen by accident. It is important to value the local community role of existing gathering places such as schools and churches, and the importance of local access to amenity and social infrastructure. If we get it right we can reap the multiple co-benefits of investing in local community especially in improved health and wellbeing. We can and should, plan for sustainable, resilient and healthy communities.

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