
The role of collaborative design in delivering inclusive, cohesive and self-sufficient communities

Emily Gait and Irene Tortajada, Sustrans Scotland

1 Introduction

Communities face many barriers to walking, cycling and wheeling, from a lack of quality infrastructure to individual circumstances.

Sustrans Scotland's Street Design Programme aims to identify and tackle these barriers collaboratively with local people, based on Donald Appleyard's (1981) theory on community severance. The programme works with some of the most deprived communities across Scotland, where the public realm is usually neglected, and inaccessible. Through meaningful engagement, it is possible to co-create more liveable neighbourhoods that, in turn, are more attractive environments to travel through by foot, on bike and wheeling. To achieve this, we must understand the demographic makeup of a community and tailor engagement approaches to ensure all stakeholders are included and empowered to participate in the decision making process.

This paper uses evidence from two current Street Design projects in Aberdeen and Stirling, to compare engagement approaches and understand the journey to co-designing more liveable environments. The paper will start by defining the term collaborative design and discuss both projects in turn before drawing conclusions to demonstrate how collaborative design can deliver inclusive, cohesive and self-sufficient communities.

2 Background to this paper

2.1 What is Collaborative Design?

Collaborative design consists in redesigning streets alongside communities and incorporating local knowledge to encourage play, greenery and recognise local history and connections to a place (Appleyard, 1980). Donald Appleyard's research in 1980 studied social interactions across three neighbourhoods each with different levels of traffic volume. His findings confirmed how infrastructure design can impact on people's mental health as well as physical movement. It became clear that to design streets for people we must involve people in the design process.

Community involvement has gradually been introduced in Scottish Planning. Since 2011 the Scottish Government has supported and funded the Charrette process which is frequently used by both public and private sectors. In 2005 the Scottish Government launched the National Standards for Community Engagement which is a set of principles to help support the process.

Community involvement varies in design and there are different levels of engagement, starting from the very minimum of 'informing' to the maximum involvement of 'collaborative working' where the project partner and the public work together in each aspect of the decisions. Community involvement in design is delivered through a series of engagement methods, ranging from questionnaires and surveys to focus groups and walking audits. Whatever methods are chosen, an element of face-to-face engagement should always be present in the collaborative design process, as it opens up discussions which help address change and create a holistic vision for the place (Campion, 2018).

This paper will discuss the use of collaborative working through two projects following the Sustrans Street Design Programme.

2.2 Street Design

Funded by the Scottish Government, Sustrans Scotland's Street Design Programme is an award-winning design and engagement service, empowering communities to transform their neighbourhoods and urban spaces. Designing spaces with people at the focus creates a good environment not only for walking, cycling and wheeling but also for people's physical and social health.

By involving local people right at the start of a project, Street Design demonstrates the following outcomes:

- **Stronger communities:** an increase in the sense of empowerment and willingness to be involved in local decision-making.
- **More walking, cycling and wheeling:** within the project area and improved accessibility for people with disabilities. This is achieved by improving key routes, connecting local destinations and reducing traffic speeds and volumes.
- **Better quality places:** improved local perception of the safety, attractiveness and sociability of public spaces, including enhanced greenspace and freedom for children.

Street Design uses a four stage collaborative engagement process to create a concept design:

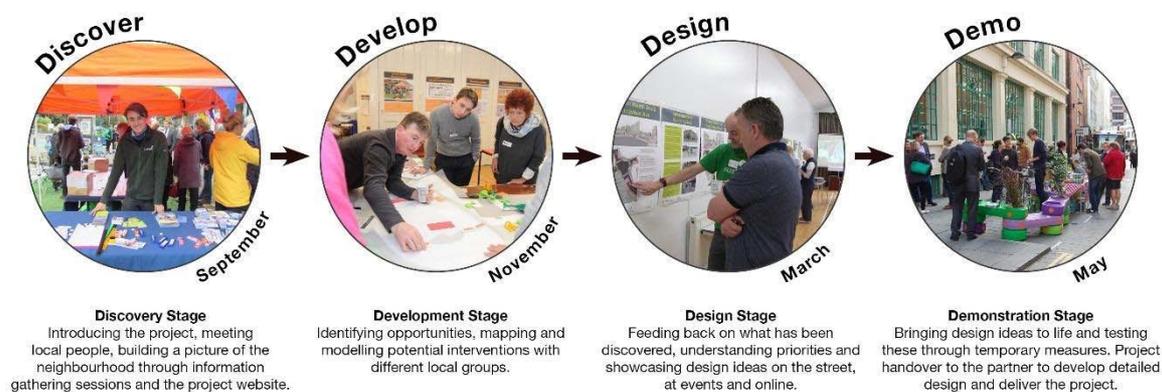


Figure 1: The Street Design Process

This paper will introduce two current Street Design projects, located in some of the most deprived parts of Scotland. Both projects follow the process above but tailored accordingly to meet the needs of each specific community and place.

3 Raploch Street Design Project, Stirling

This project, in partnership with Stirling Council, is focused on making the street more inclusive and accessible for vulnerable groups to move around independently, including disabled people, children and the elderly. An important aspect of the project has been working directly and collaboratively with these specific user groups.

3.1 Background and project focus

Raploch is a district of the city of Stirling, which lies to the south of the River Forth in central Scotland, and whose origins date back to the 17th Century.

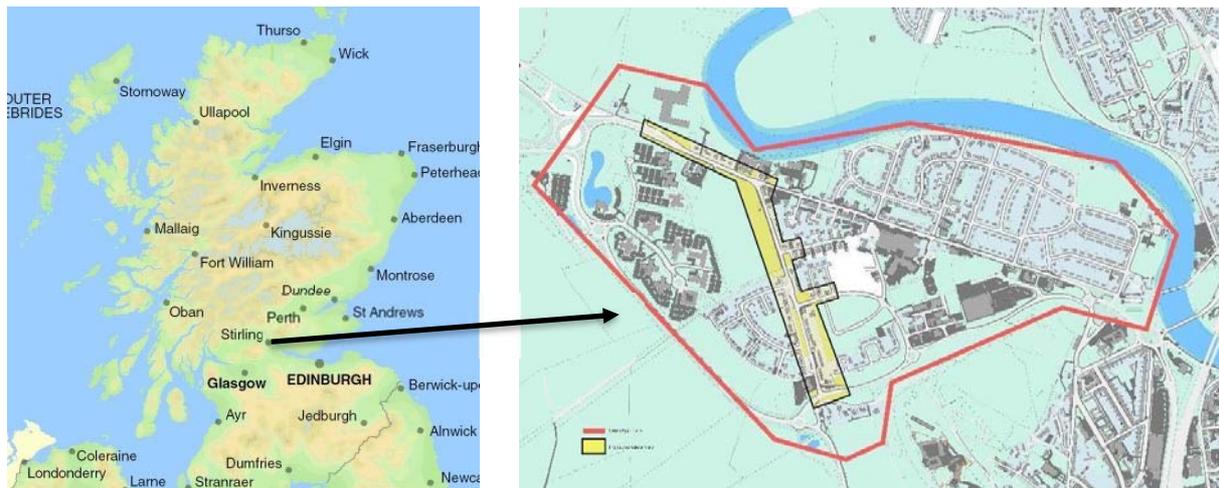


Figure 2: Raploch location in Scotland and project boundary

| | |
|------------|--|
| Population | 3,151 |
| Area | 4,1 square kilometres |
| Employment | 24% employment deprived |
| Income | 31% of residents are income deprived (income support and income-based allowance claimants) |
| Health | 30% with fair, bad or very bad health |
| Households | 64% social rent |

Table 1: Raploch Community Profile

In 2012, 3 data zones in Raploch were in the most deprived 1% in Scotland. Data from SIMD 2016 shows the area is improving, as it currently stands in the top 5% most deprived areas of Scotland. However, alcoholism and drug addiction are still deep-rooted and pervasive issues in the area. There are also two care homes, a home development for the elderly and a special needs school in the area.

In terms of transport, according to the 2011 census, 54% of households do not own a car, and 56% travel to work by car. Only 1.2% of residents cycle to work, while 17.4% go on foot. Given the considerable number of car-less residents, it was considered an important goal of the Street Design project to ensure residents have suitable and safe active travel alternatives, such as walking and cycling, to access local facilities and workplaces.

3.2 Engagement so far

Since September 2018, the project team has gathered information and developed design ideas through more than 30 activities and meetings with a diverse section of the community. Below is an example of some of the engagement methods used.

3.4.1. Community Liaison Group

The first stage of the engagement process included meetings with over 16 key community stakeholders, ranging from head teachers, local care homes and the Stirling Area Access Panel to form a Community Liaison Group. This group has helped shape the project's engagement methods, such as adapting the design workshops to residents at the local care home and advising on how to involve pupils from Castleview (a school for additional needs) and Raploch Primary.



Figure 1: Community Liaison Group Meetings

3.4.2. Discovering the area

Three guided walks were conducted during which the street environment was assessed with local mothers with buggies, Stirling Area Access Panel, staff from Forth Valley College, children from the local primary school, residents from a local care home and children from a special needs school. The objective was to gather feedback on material barriers to accessibility, with a special focus on the experience of vulnerable groups.



Figure 2 Children's audit



Figure 3 Care Home residents audit



Figure 5: Mothers with buggies and wheelchair audit



Figure 4: Mothers with buggies audit

The project team created a series of handouts that included key questions about the accessibility of the street, such as 'Are you able to cross the street freely and safely in this section?' and 'What do you like / dislike about this street section?'. Participants were also asked to rate different aspects of the street, such as 'sitting', 'play and recreation' and others, from 1 to 4, 1 meaning 'a lot of room for improvement' and 4 'little room for improvement'. The graph below shows the average scores for different themes. As you can see, the maximum average score for any given theme is 2, which shows that participants indicated the need for significant improvements in the street.

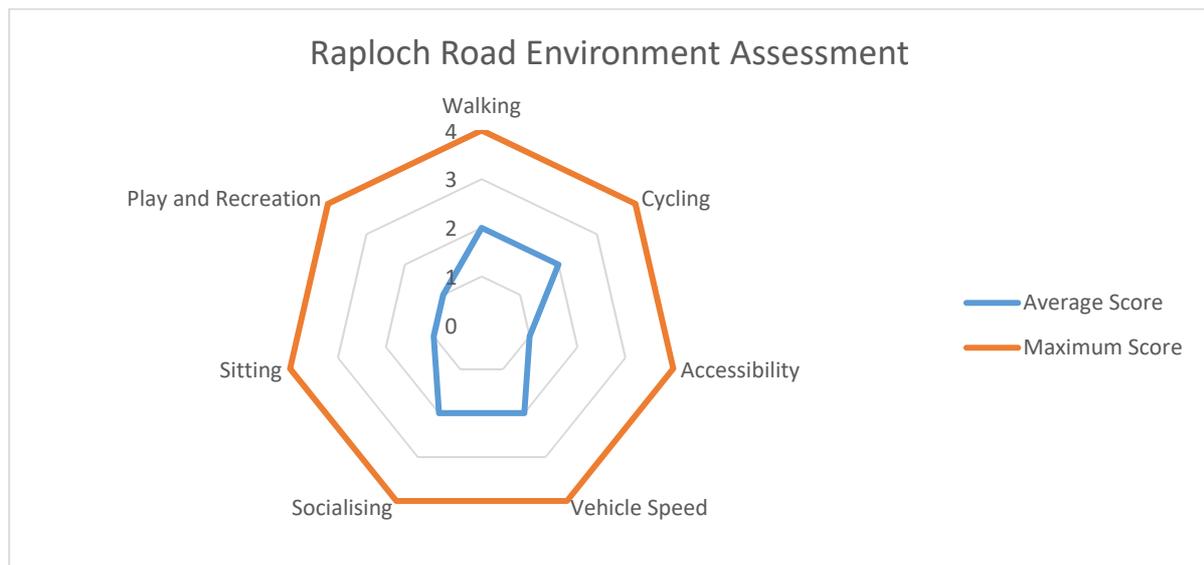


Figure 6: Graph of average scores in street assessment

The opportunities and accessibility concerns identified by children, mothers and locals with restricted mobility in the walks provided essential insight and expertise on their needs in the public realm. Gathering feedback onsite was key to recording all the material barriers accurately, as this allowed for a level of detail that could not have been achieved through more traditional consultation methods.

3.4.3. Developing ideas

Once the barriers were identified, design sessions using an interactive model kit was used to develop solutions to address these barriers. In this activity participants can place to-scale street design elements in a map to indicate which interventions they would like to introduce and where.



Figure 7: Model Kit workshop with children



The model kit proved to be a powerful tool to explore and visualise different design ideas with people with little or no design experience. It was a useful way of eliciting reactions towards specific interventions and visualising them at an early stage, without stirring the community towards any particular option by having it in paper. It was also highly adaptable to different audiences and helped to foster a more relaxed environment for the community to express themselves imaginatively.

Figure 8: Model Kit intergenerational working

These workshops were also adapted for children and older people from the local care home, some of which had dementia, which means the material sizes and colours had to be tailored for them.



Figure 9: Model Kit workshop with care home

3.4.4. Behaviour change conversations

One of the demographic groups that the project team struggled to reach throughout the early stage of the project were those between 13-18 years of age. In order to address this, the project team contacted local youth clubs and organised active travel workshops for them. During the session, the groups discussed factors influencing their travel choices, barriers to cycling and ideas to increase cycling for everyday journeys among young people.



Figure 10: Youth session about active travel



The workshop incorporated the Influencing Behaviours – Individual, Social and Material (ISM) tool, which also encouraged broader thinking about cycling in the local environment.

The project team also adapted the workshop for the Community Liaison Group, where the information gathered at the youth session was presented and discussed. This provided a wider perspective that included other needs, such as those from care home residents and of children with disabilities.



Figure 11: Active Travel Workshop with Community Liaison Group

Embedding the behaviour change element throughout the process, in the form of active travel engagement activities and research, was important in order to address individual and social barriers to walking and cycling, which cannot be solved through infrastructure.

3.5. Summary of findings and outcomes

After combining and analysing the information gathered through the first stages of the engagement, as well as carrying out observations and surveys, a series of desired design outcomes were developed, which were divided into three key themes:

- **Neighbourhood zone:** strengthen the visual, physical and social connections across Raploch Road. Lower vehicle speed and volume.
- **People movement:** make it easier for pedestrians, cyclists and wheelchair users to move freely and cross the street safely, with more crossing points.
- **Wayfinding and Landmarks:** bring to life local treasured stories and routes by co-creating signage, artwork and gateways

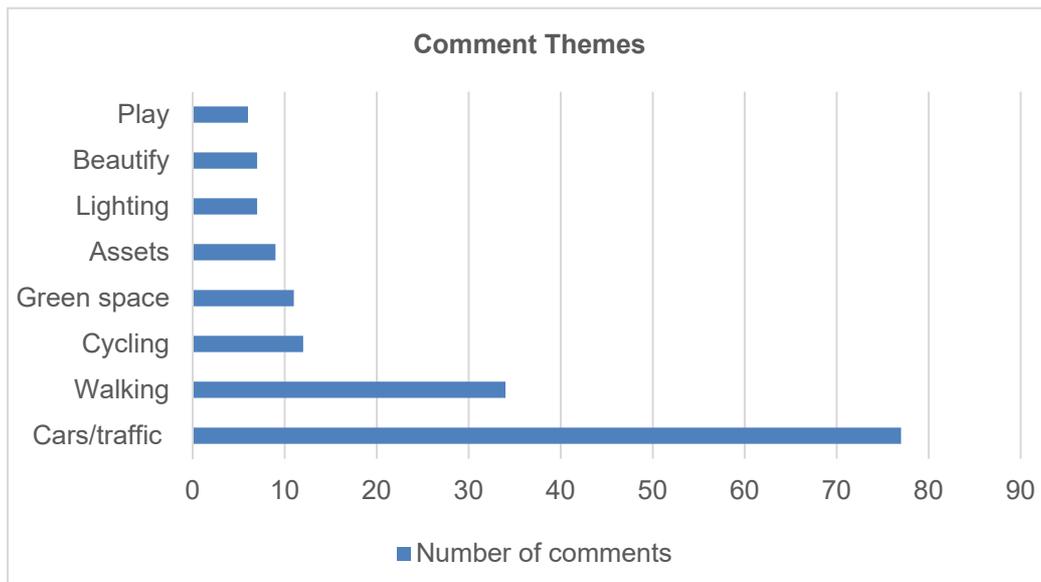


Figure 12: Number of comments received about each theme



Figure 13: Proposed design for a street section

The input of seldom heard groups shaped the proposed designs in a very significant way. For example, numerous drop kerbs, continuous footways, smooth and straight pavements, seating, paths in green areas, toucan crossings and raised tables were added to the proposed concept design as a direct result of their involvement in the collaborative process. Another interesting example of the insight resulting from our collaboration with the community was the suggestion by care home staff of adding colourful art and furniture to the street, as it would provide a reference point for their residents with

dementia, and therefore help them get oriented. This kind of contributions would likely have been lost in more general consultations, where hard to reach groups are less likely to participate in a meaningful way.

Some of the interventions suggested by the community have already been completed in Raploch in the form of temporary changes. This included adding several benches to the street, as well as a community noticeboard and planters. The Community Liaison Group chose and helped deliver these interventions, and were given keys to the noticeboard.



Figure 14: Temporary interventions delivered by the community

4. Tilly-Wood Street Design Project, Aberdeen

This project, in partnership with Aberdeen City Council, focusses on strengthening the connection between two communities in Aberdeen - Tillydrone and Woodside. Whilst this project is similar to Raploch in its approach to engagement, there has been a real focus on bringing the communities together through the cohesion of physically re-connecting two areas.

3.1. Background and project focus

The project 'Tilly-Wood' includes two communities, Tillydrone and Woodside, which are located between Aberdeen City centre and the River Don. The communities are currently severed by a railway line which leaves two access points of travel between the two areas; a neglected underpass with no mobile accessibility and a narrow road bridge. Both communities retain their own identity with a separate community council, primary school, doctors and library but there are many important journeys made between the two by foot, on bike and wheeling.

The population over the two communities is 8,229 and over three quarters reside in flats (twice the population of Raploch). The area figures as one of the most deprived in Aberdeen in particular when looking at health, but also for income. Tillydrone is within the most deprived 20% areas whilst Woodside is in the 10% SIMD (Scottish Index of Multiple Deprivation, 2016). This area is in one of the three priority localities identified by Aberdeen Community Planning Partnership.

Despite the high level of deprivation, low life expectancy and the rise of unemployment, most people in the area own a car. The volume and speed of traffic in the residential area is a public concern and in 2011, Living Streets conducted a road safety audit on the main road through Tillydrone, Hayton Road.

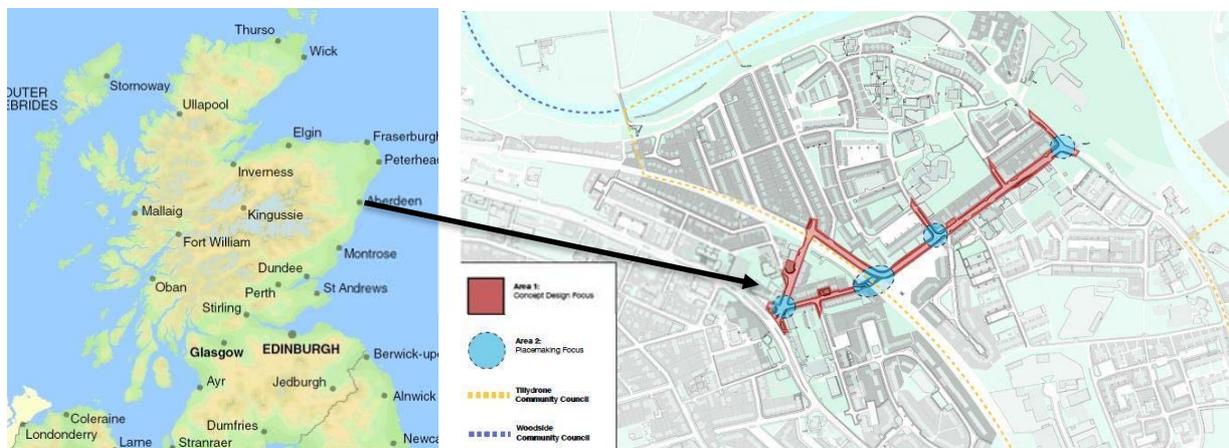


Figure 15: Tillydrone and Woodside wider location and project boundary

3.3. Engagement so far

The Tilly-Wood Street Design Project is currently in its final stage of engagement, where the project team are collecting public feedback on the design ideas which will feed into the overall concept design. This project followed the same process as the Raploch Street Design project above by using the 'four

step process' mentioned in section 2.2. However the engagement methods used between the four main events differ to meet the needs of the community and the focus of the project.

Over the last 6 months the project team has engaged with over 1,500 people in the area through various engagement methods. Below are some examples of the activities carried out.



Figure 16: Tilly-Wood project launch

3.3.1. Observed and surveyed data

To help understand the area and identify local movement patterns the project team carried out traffic and household surveys alongside on street observations using the Jan Gehl 'Public Life Study' method. The data not only helped to inform how people travel in and around the area, but also indicated the key spaces where people tend to meet, play and socialise. The data has helped to shape the designs (see Figure 17 below) and inform the community on the wider picture of traffic and how the street environment is used in the area.



Figure 17: Public Life Study results for Tillydrone Gateway (traced desire lines on the left and proposed design idea on the right)

3.3.2. Public events

The project launched in September 2018 with a public drop-in event at a local community club. Maps of the area were displayed at the event and the public were invited to annotate the area using pens and post-its to explain what their likes and dislikes were of the space. These type of events are useful for talking to a range of people however the low attendance of the launch event suggested that this wasn't the most beneficial way to reach everyone as people lived across two areas. To communicate effectively across the project area the team needed to arrange separate activities with community groups which already existed in the area, and across Tillydrone and Woodside.

3.3.3. Meeting local groups

Despite the small area of the project there are a number of active groups across both communities. The project team has regularly attended community council meetings and local events including lunch clubs, open days, health walks and carried out activities with schools and youth groups. The project team has collected a huge number of comments on maps, online website, drawings of the area, questionnaires and conversations.

A significant outcome of this engagement was creating a project steering group which includes community and political representatives from both communities. The Steering group meets roughly every two months and is integral in helping the project continue once the Street Design process comes to an end in June 2019.



Figure 18: Meeting with one of the community councils

3.3.4. Engagement activities

A large proportion of people in the area do not have access to internet therefore the project team focused on offline activities and face-to-face engagement. Throughout the project, the project team held led walks with adults and 'Big Street' surveys with school pupils and youth group to understand specific barriers within the area whilst observing how people use the space.

As well as being present in person, the project team has used written communication in the form of posters, on street displays, leaflet drops and information displayed in local facilities throughout both communities. From the desktop research, the project team identified Polish to be the second most spoken language in the area so ensured that as much of the written communication as possible was translated.

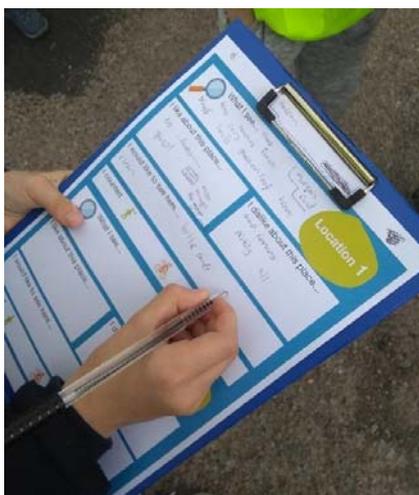


Figure: 20 Big Street Survey Questionnaire



Figure 19: On-street Tribboards to inform locals about the project (translated into Polish)



Figure 21: Big Street Survey and public sessions (including model kit activity)

3.4. Summary of findings and outcomes

The initial engagement resulted in low attendance and general disconnection to the project. It also became clear that the physical separation between the two communities also had an impact. It was therefore necessary to tailor the engagement to the makeup of the community and tap into as many local channels as possible across both communities.

Through this more tailored engagement approach, the project team were able to generate the following key improvements and themes the community wanted to see addressed through the project:



Figure 22: Word Cloud created from public comments



Figure 23: Key improvements developed from public feedback
Percentage of comments referring to each demand

One of the next steps of the project is to install temporary interventions, chosen and maintained by the community and local businesses. These interventions will hope to build on the growing momentum for change generated by the engagement and start to create a sense of ownership within the area.

The project team are also working with local community groups in the area to organise a clean-up campaign to address the problem of littering in the area which was highlighted as a local concern. This is a useful example of how a barrier can also be tackled through behaviour change as well as design.

Collaborative design was beneficial in this particular project as it focused not just on the physical but also the social connection to the area by bringing people together to discuss common concerns and develop holistic solutions.

4. Conclusions

4.1. Common themes

Although both projects are based on different communities, they use similar principles to help empower local people to impact decisions affecting their environment. These principles include using context specific engagement methods, prioritising face-to-face communication and ensuring a long lasting legacy through behaviour change activities.

Tailoring engagement methods to suit the makeup of a community is vital throughout a collaborative design process, which requires flexibility and being creative in choosing the right methods. Although both projects followed the four step process mentioned in section 2.2, a tailored engagement approach was required to suit the needs of the community. In Raploch, engagement was tailored to suit different age groups and disabilities, whereas in Tilly-Wood the engagement shifted from holding large public events to more focused engagement with smaller groups.

In both projects, behaviour change plays an important part in ensuring a long lasting legacy of sustainable travel choice alongside the proposed infrastructure. This was especially appropriate given the high SIMD indexes of both Raploch and Tilly-Wood. Through early engagement, it was discovered both communities face many social and individual barriers to active travel, especially cycling. This included barriers such as not being able to afford adequate equipment, lack of storage space, and social

perception of cycling as something done for leisure. By ensuring these barriers are identified and creating an action plan to address them, the community is in a better position to benefit from the new infrastructure.

Both project teams have taken steps to action some of the identified solutions to these barriers. For example, the Raploch team is attending Stirling Council's Active Travel Steering Group meetings, to inform them on the team's recommended action plan. In the Tilly-Wood team, it was raised by the community that litter made walking and cycling in the area a less attractive option, so the team launched a litter-picking campaign with the community, which has engaged people of all ages.

4.2. Next steps

When writing this paper, both projects were in the design consultation stage of the co-design process. After the local communities have helped the project team to develop the designs in more detail, the concept design will be handed over to the respective local authorities for delivery through funding from Sustrans. It may take a few years for the projects to be delivered, so to ensure the community doesn't lose the momentum and trust created by the engagement so far, the project team are working with local people to set up a series of temporary interventions on the street.

The temporary interventions, chosen by the community, will include quick, but effective improvements to a street, such as seating, temporary drop kerbs, improved green spaces, artwork and help to create a destination to spend time in and socialise. Some of these interventions have already been delivered in Raploch.



Figure 24: Visualisations of proposed temporary changes (Raploch, and Tilly-Wood)



Figure 25: Temporary interventions delivered in Raploch

Find here a video of Raploch community members helping deliver the benches and discussing the project: <https://www.facebook.com/SustransScotland/videos/2312360542380114/>

The co-design process in both projects have helped strengthen community cohesion and stretch the boundaries of ownership and 'rights' to use the public space, with many people becoming directly

wrapped up in the care of what was once public space managed by the Council, such as the new benches and planters in Raploch. These interventions build on the momentum generated by the engagement and are a powerful tool to help foster a self-sufficient community.

4.3. Conclusions

This paper has discussed the process and outcomes of using a collaborative design process for two projects through the Sustrans Scotland Street Design Programme by highlighting some of the most effective methods of engagement and challenges overcome. By comparing both projects, this has demonstrated how collaborative design can be tailored for different audiences to help deliver inclusive, cohesive and self-sufficient communities.

Overall the following conclusions can be drawn:

- Context specific engagement methods help ensure the process is inclusive.
- Participants in the engagement should be representative of the range of needs and aspirations of all user groups in the community.
- Face-to-face engagement should be prioritised, as it builds trust and allows for a more accurate understanding of the community's aspirations.
- Encouraging the community to deliver the change they would like to see fosters self-sufficiency. It is important to empower them beyond the design to ensure the momentum built through the engagement continues beyond the lifetime of the project.

5. References

Charles Champion, 2018. 2020 Visions: Collaborative Planning & Placemaking. RIBA Publishing.

Donald Appleyard, 1980. Livable Streets: Protected Neighborhoods?. Volume: 451 issue: 1, page(s): 106-117 Issue published: September 1, 1980. Sage Journals

The Scottish Government, 2015, National Standards for Community Engagement, http://www.voicescotland.org.uk/media/resources/NSfCE%20online_October.pdf

Acknowledgements

Thanks to Scottish Government funding, through Transport Scotland, we work with local authorities, community groups and other stakeholders across Scotland to help remove physical barriers preventing people from walking and cycling more, encourage stronger ties within communities and create bright, positive urban environments.

Thank you very much to Emily Davie, project coordinator of the Sustrans Scotland Street Design team, for providing excellent advice and guidance on this paper.