like Google Maps and Waze. "You load it, you stick it in your pocket, and your location alone triggers the playback on your screen," Steinmann said.

He asked six students at the nearby Royal Academy if they could compose pieces for 30 tree species, which would be applied to 150 trees in part of the park. When visitors using the app approached the trees, they would hear the composition through their headphones. These tracks interweave as visitors pass under the crossing canopies of different trees. This means that as the trees are approached from different directions it will always sound slightly different.

"I felt that writing music underneath the tree really helped to create the reflection of the tree"

Each piece of music ranges from 30 to 90 seconds and runs on a loop. With every piece looping at different times, this proved an interesting challenge to the composers. "You can never control the overall sound at any one particular time," said Isaac Oliver Short, one of the students involved in the project. "For me it was very different from anything I'd done before," he added. "It's interesting to hear a piece of music that's been created and then relate it to a tree, but to start from a tree as an original idea is quite odd." From first simply visiting the trees and gaining a sensory experience of them, he researched them, took photos and sat underneath the trees themselves to compose the piece. "I felt that writing music underneath the tree really helped to create the reflection of the tree."

But if you're plugged into headphones, aren't you effectively muting an important part of the experience of being with trees? "I completely agree," Steinmann said. "You are doing that. It's not an organic response. It's a narrative response. It's storytelling, and that's an important part of being human." R

You can listen to Marianne Brown, Matt Steinmann and presenter Amanda Carpenter discussing the project on the podcast Planet Pod. theplanetpod.com

Defining the 'peace' in quiet

New research aims to help protect urban tranquillity, writes Sarah Payne

It might be a quiet alleyway or courtyard tucked away from the busy streets or even within popular well-known sites: all across busy urban spaces, treasured places of quiet can be found.

Recognition for the value of a quieter city is increasing. Small or large, some of these oases of peace are being noted and protected by local councils as part of their required noise action plans by the European Environmental Noise Directive. Following from this, I and a team of researchers set up Project DeStress, which aims to identify physical and social criteria that help create urban quiet areas, so that they can be protected in the future.

As well as quiet areas mitigating against the negative health impacts of urban noise, such as annoyance and cardiovascular diseases, quiet areas may also provide health-promoting benefits. A recent study by Project DeStress sought to understand what these health benefits might be and how they varied across places that may or may not be considered urban quiet areas by local authorities. The study, which involved 151 participants, took place in an urban garden in Edinburgh, an urban park in Brighton and Hove, and an urban square in Sheffield, in the late summer of 2018. The areas covered varied in size, level of biodiversity, and number of people present.

People within the three places studied freely named 19 different types of benefit, ranging from resting, relaxing, feeling good and being in Nature, to being with or avoiding people, and avoiding traffic. Overall, a third of the people questioned said a benefit was that the place was peaceful, quiet, or calm. (Comments included "calm place to sit", "bit of peace and calm from city", and "relative quiet".) Although these places varied in sound levels, perceived quiet, the presence of natural, human or traffic sounds, and naturalness, they were all considered to provide a benefit of peace and quiet in the city, and feelings of relaxation. Therefore, understanding more about public perceptions of the benefits of a place may be as important as measuring sound level and presence of greenery when identifying quiet urban places to protect.

Anomalies arose within the study's results, however, including people's ability to recover and reflect not increasing in line with levels of biodiversity and perceived naturalness, as is usually found. However, other factors, such as time spent in the place and whether the people questioned were with someone else could have affected these results. To provide more conclusive evidence of the health and wellbeing benefits of 'quiet areas' both with and without Nature, a virtual environment simulator that can systematically vary the physical and social characteristics of a place is being developed. Coupled with analysis of the public's identification of quiet areas, Project DeStress hopes to produce representative criteria for identifying quiet areas that improve people's health and wellbeing and are worth protecting. R

Sarah Payne is Associate Professor of Health in the Built Environment at Heriot-Watt University in Edinburgh.
tinyurl.com/urban-quiet-areas