QUALITY TIME

The women of Keryano, Ethiopia are the first to walk across their community-built bridge

New corporate sponsorship is enabling the volunteer-based charity Bridges to Prosperity to expand its programme of building bridges in remote places, to the benefit of local communities and also the companies and engineers involved. Lisa Russell reports.

For most bridge engineers each project takes years – or even decades – to come to fruition. But the brid-ges built by charity Bridges to Prosperity (B2P) are often in place in a matter of weeks, providing safe passage where no other local route exists. Many communities around the world are in acute need of such crossings and the latest companies to join with B2P in helping provide them are Parsons Brinckerhoff and Flatiron. For the members of staff who volunteer, there is the satisfaction of giving something back, while building skills in situations that are often very different to their day-to-day roles.

PB has recently started a formal strategic partnership supporting the growth needed for the charity to accomplish its 2020 goals. It aims to start a programme in a new country every year up to 2020 and, through training, increase worldwide footbridge production in poor rural areas by 500 per year. PB is involved on two fronts; through the USA-based PB Foundation and through the company's Australian business.

PB International director Bruce Johinke is now in Australia but used to be based in New York, where he was involved in some of the early discussions about supporting B2P. “Our firm has a long history of support to the communities in which we live and work,” he says. “It is an essential part of our ethics and culture - and has the strong and enthusiastic support of our people. However sometimes that enthusiasm can be spread over a large number of activities, and we like the idea of having a programme to focus on and support, a programme that will in time show concrete benefits to the community.”

"This is something that fits well with our core business strategy and offers us the chance to ‘give back’ through monetary support as well as staff support," adds PB senior vice president/director of corporate communications Judy Cooper. "To be able to expand our sense of community to those beyond our immediate geographies is a significant benefit to us in both a professional and a social sense."

Contractor Flatiron is also working closely with B2P. “We were looking for a way for our employees to use their expertise to give back to communities,” says marketing and communications manager Christie DeLuca. Working with B2P means that they can use their engineering skills to help build bridges and also to train the local labour force in skills that can then be applied to other projects. “This is our first experience with this programme - we are planning on it being a long-term relationship,” she says.

Since being founded in 2001, B2P has already built more than 50 bridges in more than a dozen countries, including about nine so far this year. Founder Ken Frantz was moved by an image of villagers struggling to cross a broken bridge in Ethiopia. Within a year, he had ensured that a new truss was in place to replace the missing span *(Bd&e issue no 38)*. Projects elsewhere have followed, including Peru, which already had a long tradition of suspended bridges over canyons *(Bd&e issue no 42)*. Direct corporate involvement in individual bridges has included Alpin Technik's suspension bridge in Peru *(Bd&e issue no 46)* and a suspension bridge built in Honduras by Ross Construction volunteers to a new ▶

Children play on their new bridge at Mezcalillo, Honduras

Simon Douse uses an Abney level to survey a potential crossing point

PB's Bruce Johinke and Simon Douse discuss possible waterway navigation solutions with the local community leaders in Soibada, Timor-Leste

▶design by Jeremy Johannesen and his colleagues at McNary Bergeron & Associates. This design allows bridge decks to be lifted high over wide valleys and flat-banked rivers.

Six to eight bridges are typically built in a country during a two-year programme. Programmes are currently set to start in Guatemala and Timor-Leste. When starting in a new country, the first step is to carry out a pilot project, explains B2P director of operations Avery Bang. "This pilot stage is one of the most cost-effective ways to ensure that we fully understand a country before committing ourselves to a full programme."

Timor-Leste was seen as an obvious location for the efforts of PB in Australia as it is a close neighbour with strong historical links, and Johinke himself has long-term links there. "I believed the need was there," he says. "We are only in the initial stages, but I am encouraged by the level of support and enthusiasm being shown by our staff, and by the support of B2P in identifying appropriate sites and setting up the programme."

His colleague, electro-mechanical engineer Simon Douse explains: "Initially we are going to build a 'demonstration bridge' to demonstrate the technology to local government. We will follow this up with a sustained programme of bridges to a point where local parties have learnt the skills required to build bridges with minimal support from B2P and PB" Until such a point, the expectation is that four or five of the firm's staff will work on each bridge alongside members of the community.

Most of the charity's bridges are built to a standard design, but sometimes design support is needed, for example in stabilising river banks, says Douse. This means that other staff can participate without having to leave home. PB is supporting staff in Australia in two ways: firstly by offering the opportunity to help as a part of their work and secondly with financial support, covering some of the time and costs, while staff also use annual leave. "The bridge work is a refreshing change from the normal consulting work I do and gives me chance to use my hands to build a bridge," he adds.

There has already been an initial visit. "We visited a number of communities in Timor, all of which need footbridges urgently," says Douse. High water levels during the wet season can cut people off from health care and keep children away from school.

Structural engineer Matthew Barber, who works in PB's New York office, was part of a team that made an initial visit to Central America. The visit served partly as a training exercise, but also gave the opportunity to offer advice on some sites in El Salvador. Visiting completed projects in Honduras allowed the team to see how the bridges perform. "They were in very good condition. They are very durable – they are made to last and seem to be doing so," says Barber.

B2P's dominant bridge type is a suspended structure that relies on load-bearing cables both at the handrail and deck level. The suspended bridge is appropriate for mountainous gorge settings where freeboard may be achieved without the elevated towers and camber of suspension designs, says Bang. "One of the greatest benefits of the suspended bridge is that it can be designed and built in eight weeks," she adds. The engineers from PB in New York will initially build a 50m-long suspended bridge in a rural community in Guatemala, working with the community and trained foremen, and with B2P playing a facilitating role.

PB is also helping out with technical support on tasks such as drafting and production of manuals. "I've turned it out to the greater PB community for some help," Barber says - there has been no shortage of volunteers.

Companies including Ross Construction and McNary Bergeron & Associates have worked on individually-designed bridges. "They were able to come up with a new suspension design using locally-available telephone poles as the towers. That was really ingenious," says Bang. The charity's future programme also benefits from such innovations, as it doesn't have enough technical staff for extensive design development, she says. "If we have companies interested in covering the costs and the overheads for a particular bridge then we are able to gain a lot of experience and insight into further developing our technology. We are aiming to develop a cost-effective suspension design," she says.

"If we can have companies give us great ideas then we can gradually come up with a new design that would be replicable and sustainable and that could be included in our training programme."

Flatiron is also working with designer McNary Bergeron & Associates. The site for its first bridge in Guatemala will be selected very soon. There is expected to be competition among staff to volunteer and a committee will choose who gets to go. "This seems like the kind of thing they will love," says DeLuca, adding that the volunteers will come from across the company. "It will give our employees a chance to work with different people," she adds.

The intention is that the bridge will comprise more than 85% recycled materials, including old tyres for deck surfacing. Bang also sees scope for innovations such as panels made of pellets formed from plastic bags. "We try to create local entrepreneurial opportunities to stimulate the local economy," she says. A contract to supply a bridge can help kick-start a new business. In addition to the support from companies, B2P also has a strong volunteer programme for individuals, designed to be flexible to suit strengths, experience and interests. "We try to ask a minimum of about three weeks," says Bang.

Involvement in B2P benefits companies and individuals as well as the communities they are building for. The chance to volunteer while still maintaining one's normal work helps improve multi-tasking abilities, believes Cooper. The opportunity to help less fortunate communities is also a big attraction. Individuals get the chance to develop their people management skills and to 'get their hands dirty' working in an environment new to many. "Involvement in the bridge programme supports the company's core values," adds Douse. "It is also a very attractive offer to consider from the perspective of staff retention and recruitment." ■

www.bridgestoprosperity.org