

One Axle or Two? An ICSID Interdesign in South Africa

David Stairs

I was back in Africa for the first time since 2002, and for the first time ever in South Africa. The occasion was the 2005 Interdesign for Sustainable Rural Transportation, sponsored by the South African Design Institute, an arm of the South African Bureau of Standards (SABS), a parastatal corporation. It was the second effort in six years for the South Africans, who participated in a multinational Interdesign devoted to water in 1999.

The Interdesign program first got underway in 1971. Since that watershed year, ICSID (International Council of Societies of Industrial Design) has endorsed thirty-seven Interdesigns on subjects ranging from the production of bread (Minsk '71) to unemployment (Northern Ireland '76), and from product design for the handicapped (Maastricht '82) to transportation for the future (Bergslagen '94). Because Interdesigns have occurred primarily in Europe, with a handful scattered across other continents (Asia: 2, S. America: 5, Africa: 1), this was a good opportunity to observe the concept's effectiveness in the developing world.

Actually, I was beginning to wonder whether I'd ever make it to South Africa. There was a time when I swore I didn't want to see Africa's premier economy and most highly industrialized state. Things have changed, but the scars from a long civil conflict are still evident. South Africa's forty-four million people, lopsidedly divided between a minority of whites, Indians, and mixed-race people, and the large majority of blacks (seventy-five percent), has a two-tier economy. As in other parts of Africa, there is the formal sector, the one that registers on government economic records, and then there is the informal one that drives government tax collectors crazy wondering how to tap into it. In South Africa, the distinction is especially pronounced.

Take the highways, for example. South Africa has a primary road system that is the envy of the continent. High-speed and well-maintained, it connects major urban areas and sustains a form of early-morning, rush-hour gridlock that could only be described as quasi-American. Then there also are unusual diversions such as *The Lost City*, Africa's first and most famous theme park, and a booming mall-development culture that seems strangely out of place on a continent specializing in open-air bazaars. On the other hand, the men and boys approaching BMWs at busy intersections with everything from oranges to rolls of plastic garbage bags were not Bowery

bums, and the self-appointed parking lot attendants at the malls did not expect more than a few cents for protecting your car from theft, but they did require something.

Nelson Mandela's ascension to the Presidency and the return of majority rule to the black population narrowly averted national catastrophe in 1994. The decade that ensued was "the South African miracle," a textbook example of how people can cooperate to reverse decades of harm. But there still is much to be done, and this Interdesign was meant to address a particularly challenging problem.

Many rural areas in South Africa are inadequately connected to the primary transportation system. Since half of the nation's population lives in rural areas, the government is committed to addressing this issue. In 2004, the government of one of South Africa's nine provinces asked the Standards Development section of SABS for assistance in the design and development of specifications for a standardized donkey cart for use in deep rural areas. The upshot was to be the focus of the current gathering, with a value-added nod to other forms of transport. Seventy of those who responded to the call for applicants, fully half of them African designers and design students, were sent to the Orion Safari Lodge in Rustenburg, a bustling platinum mining center of the Northwest Province, for two weeks in April 2005 to wrestle with the knotty problems of non-motorized rural transport.



South Africa by bus

Day 1: Top-Down Meets Ground-Up

It was Monday morning, 8 a.m., and I was seated in conference room Jabulani III awaiting the speakers. It had been raining nonstop for two days, and I was beginning to think I'd brought inclement weather with me from gloomy Michigan. Gradually, designers filed in and things got underway.

After brief introductions by Design Institute director Adrienne Viljoen and Workshop Design Director Bart Verweckken of the Cape Peninsula University of Technology (CPUT), we were off and running. The majority of the presentations were expert briefings about the events leading up to this gathering by academics, government officials, and design professionals. By 10 a.m., we already were behind schedule, and the proceedings were hastily concluded so we could leave on a field trip to the villages of Mathopestat and Syferbult.

The journey to Mathopestat in large buses took an hour-and-a-half over paved roads. The rain clouds finally lifted, and now scudded brokenly across a rolling agricultural landscape of 360-degree vistas. This is "The Cradle of Mankind," literally the place where humanity arose, and I was drugged by these views, so typical of vast portions of Africa.

The buses soon pulled to the side of the dirt road opposite the tribal headquarters, and seventy supposedly discrete urbanites piled out; many with digital cameras at the ready. Our charge was to take photos, interview local people, and generally gather data, although the bizarre invasiveness of the scene was too Felliniesque for words.



Village children

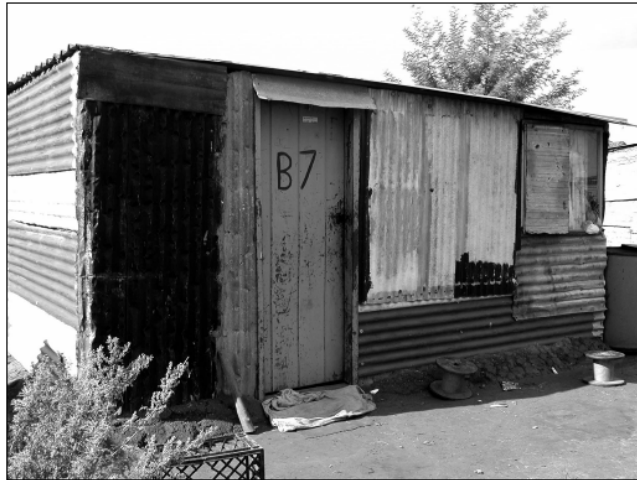


Arrival in Mathopestat

This was the first Interdesign jointly endorsed by the new ICSID/ICOGRA consortium known as the IDA (the International Design Association). As a graphic design educator, I had been placed in the Communication Group, differentiated from the Bicycle Group, Donkey Cart Group, and Two Alternative Modes Groups. My cohorts had decided that our initial mission would be to interview students at the local secondary school.

As we entered the classrooms, there was much giggling at the “outsiders,” many of whom were foreigners. But although we had come with native colleagues fluent in the local Setswana language, most of these young people spoke capable English. As we described our design brief, asking questions about the learner’s prejudices and preferences regarding transportation, it quickly became evident that none of them really understood what design is all about. We distributed Design Institute publications, and discussed the nature of our profession and the educational opportunities available at South Africa’s institutions of tertiary education.

Eventually, we coaxed the students to take the drawing materials we provided and render their own ideas on alternative transport. Few of these kids, if any, had had formal training in art, and it showed. But many of them made an effort, and the results, while not stunning, were whimsical. It always is a joy to work with young African learners, so curious and polite, and ready to burst into synchronous song with the slightest cajoling from their teacher. But we had to move on all too soon.



Homestead at Syferbult

At Syferbult, we encountered a very different environment. There the people squatted on the land, and lived in very reduced circumstances. The residents signed a contract with the previous owner ten years ago, but now it had become a sad community, devalued by the residents' fears of eviction threatened by the present owner. The town drunk serenaded us with rock-and-roll tunes on his battered guitar for pennies. School-age children were at home, and there were only one or two vehicles present. Most abodes were made of scrap materials, and working-age men were absent, either at nearby farms or away in the mines. Some of the young urban South Africans with us had never seen such conditions firsthand, and struggled to hide their shock.

Back at the Orion Safari Lodge, we spent the evening debriefing and discussing the day's events with our group leader. The young learners' drawings adorned the walls of our "studio," and the members of other groups drifted in sporadically to look at them. It had been a tiring first day, with twelve more to go.

Day 2: Revolt of the Omnibus Drivers

The next day, we were up bright and early for a much longer voyage to Pitsedisuleyang, a village 120 kilometers east of Rustenburg, and off the main transportation grid. The village's name means "how the horses died," a reference to the fact that the residents were forcibly removed from the Madikwe Game Reserve by the apartheid government in the 1950s, and their livestock perished.

The landscape there was flat, dotted with a few affluent settlements owned by tribal groups with an interest in the platinum mines. After about an hour, we reached the end of the paved road, and began bumping along washboard-style. There was reputed to be about seventy kilometers of this, but the big Volvo buses seemed pretty well suspended. Even as I was still thinking about this, we slowed and came to a halt. After a brief consultation, the drivers decided that they could not proceed without permission from corporate HQ. The buses were not made for dirt roads, and the drivers were afraid the vibrations will damage them. We still were more than an hour from Pitsedisuleyang. The Design Director decided that, in order to keep prior appointments, various group leaders and the Communication Group would continue on in a third minibus, and we were spared the two-hour wait before a disappointing return to Rustenburg suffered by most of our colleagues that day.

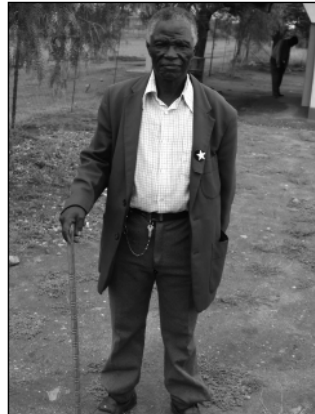
In "Pitse" we were greeted by a young, university-educated Chief and his tribal council before dispersing on our various missions. I got an opportunity to drive a donkey cart out to Olefile Senior Secondary School, where we repeated the events of our visit to Mathopestat. There, however, we were informed that learners might travel up to six kilometers each morning on foot to reach the

school. This added another two-and-a-half hours to their average day, an impediment to both extracurricular activities and family responsibilities.

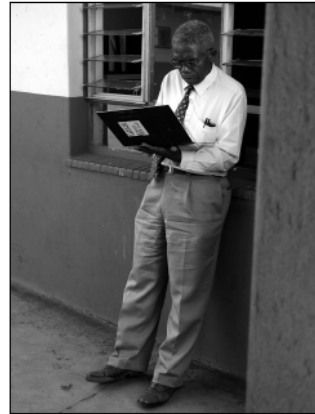
While the students were busy drawing, I had a chance to speak with the headmaster, Sam Sepato. Mr. Sepato had been at Olefile for ten years. Other than an African National Congress poster, there were no visual aids in his classrooms. The teachers lectured at chalkboards and their pupils took notes, but there were no textbooks. Mr. Sepato confirmed what the students had described: many of them traveled long distances to school. There were few taxis, and buses were infrequent. Some families of girl learners, although rich in cattle, could barely justify paying school fees for their daughters. Girls, after all, are a bad investment. They are valuable for house chores and a bridal price, but that's about all.

Ironically, one of our group members, Nomfundo Zibi, a fourth-year graphic design student at the University of Pretoria, was a young Setswana woman from nearby Pitsedisuleyang. The students seemed especially interested in hearing her success story and, as she related it, for a brief moment, she was more popular than a rock star: she was a bona fide role model.

Because of the day's delays, and the fact that our lunches were left back with the main cavalcade, we worked right through the afternoon, returning to Rustenburg at nightfall. Following dinner, those who made it to "Pitse" spent about an hour briefing everyone else on what we found. As Bart Verveckken noted, the day was an excellent example of the limits of one form of transport in rural settings. I am usually a hard worker, but it was obvious that this wasn't going to be a typical safari lodge holiday. In fact, I was beginning to wonder whether I could sustain the pace.



Tribal elder, Pitsedisuleyang



Headmaster Sam Sepato, Olefile SSS

Day 3: Little Known but Often Thought about Aspects of the Donkey Cart¹

Wednesday morning arrived and I was jealously guarding my breakfast from the ever-present Orion Safari Lodge dining room staff, which hovered over us waiting to pounce on any inactive plate. That day, we were scheduled to take a break from field visits to attend another series of expert presentations. These were to be made by representatives of both the federal and provincial governments, a woman from the SPCA, manufacturers of bicycles and donkey carts, and assorted transportation gurus.

Hour after hour, we were bombarded by a continuous stream of statistics and images regarding South African transportation, much of it repeating government documents I had already perused. It was obvious that the government had a problem trying to coordinate motorized and non-motorized transportation. The two cannot be intermixed on the highways; there already is a high national accident rate. There also are no standards for donkey cart design. Some carts are being manufactured in South Africa, but they currently are too expensive for most people in remote rural areas. As a result, rural people, who have no shortage of animals, improvise their own carts. This type of indigenous knowledge is important, but it must be supplemented. Carts need to be lighter, and easier on animals. Standards need to be developed addressing load limits, braking capacity, all-hours visibility, and so much more. People want carts that are not only affordable, but sharp-looking. No one wants to travel in a clumsy, unfashionable cart that is open to the elements on a rainy day.

¹ My high school history teacher, Dan Connelly, used to say "Little known but often thought about" whenever he wanted to point out a disparity. It's a clever oxymoron that nicely fits the subjunctive, or contingent mood of the discussion.



Learners at Olefile Senior Secondary School



Locally made donkey cart, Pitsedisuleyang



Entrance to the Baefenge General Store

Just as the donkey cart situation was beginning to look a little desperate, we got a look at the bicycle scene. In rural areas, most schoolchildren walk rather than ride bicycles. Currently available models are heavy, one-speed varieties not easy to pedal even over level ground. According to government statistics, seventy-six percent of South Africa's learners, or about twelve million young people, walk to school each day. The government proposed putting a million subsidized bicycles into the hands of South Africans. To date only four thousand have been distributed. There currently is no bicycle manufacturer in the country. And that is a lot of bikes to import from Zimbabwe, let alone Britain or India.

That afternoon and evening, the Communication Group met to brainstorm. Some of the members were restive. "What exactly are we doing? Shouldn't we be developing branding schemes?" we wondered. But with no products to market, this certainly was premature. We talked animatedly about the ideas we might develop, and I facetiously asked each of my colleagues to come up with five-hundred ideas by the next day. They asked me what planet I was from.

Beneath the humor and bravado, I was troubled by something larger. So far, there had been little interaction between any of the five groups. This seemed like a fatal flaw in the process. We were uncertain whether our group's brief was to do basic communication research, or to assist the other groups with their design efforts. It was decided that we would approach three of the groups the following day, and offer to collaborate. For me, this decision turned out to be one of the galvanizing moments of the entire event.

Days 4–6: Process Is Our Most Important Product²

By Thursday, the designers who spent the better part of a day waiting for two recalcitrant bus drivers to decide they couldn't go any further were itching to go to Pitsedisuleyang. A minibus left early in the morning with two of the groups. A couple of our Communication Group colleagues, Nkosi Bongamahlibu and Mo Ramogapi, spoke Setswana and were recruited as translators for the trip, but the rest of us stuck around to attend a morning meeting with the Bicycle Group. This group, the only one composed entirely of men, had been busy developing dozens of sketches for clever new bikes. The trouble was, they had not done any serious field research yet, and could only argue about which sketches seemed best to them.

It immediately became apparent that Roelf Mulder, group leader and co-designer of the "Freeplay" windup radio, was extremely interested in what our Communications Group colleague, Retha Claasen-Veldsman, had to say. Everyone wanted to make sure that women's needs were being addressed, since women in Africa, especially in poorer areas, bear much of the burden of menial tasks

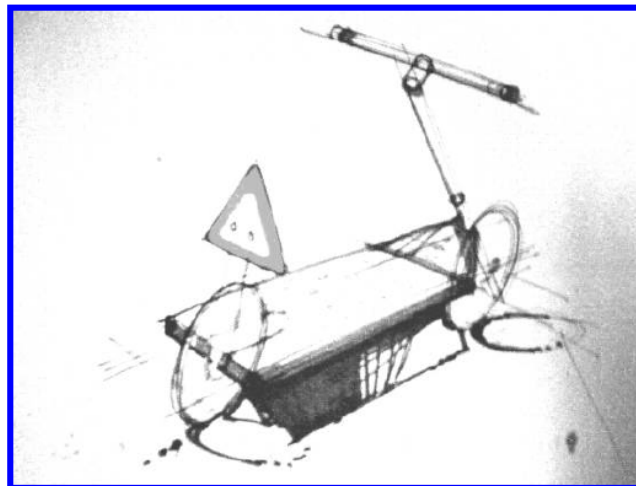
2 The 1960s GE advertised slogan "Progress Is Our Most Important Product" is only slightly altered here.

such as carrying water and foraging for firewood. The Bicycle Group had been focused on materials. Two nice ideas: one for a bike made of sheet metal and another for a scooter had been proposed. The question was, would they be accepted?

One of the problems we had been told to be sensitive to was traditionalism. Some forms of transport are considered appropriate for men, others for women. Social values instilled in childhood carry over into adulthood. New ideas often are rejected out of hand as being too radical. People like to see a thing in use before they accept it as a new possibility and, in the case of scooters, in Africa there isn't really any available precedent. We left the "bicycle guys" convinced that they needed to develop a thorough questionnaire to take to the field with them.

In another room, this one belonging to the Alternative Methods Group led by distinguished Indian design professor and bamboo expert M. P. Ranjan, the air was thick with speculation. Professor Ranjan had asked the members of his group to describe their expectations. Award-winning South African designer Tasos Calantzis politely declined. "I'm not ready to make that commitment yet," he said. Canadian designer Sue Fairburn stood at an easel fielding free associations from her peers as the group slogged through a typical instance of from the "ground-up" design process. In a design situation in which many of the participants are affluent outsiders, there was a good deal of self-consciousness over the top-down, imposed design failures of the past. As Sue coaxed a clarification from the group, she asked: "But what else can we say is important?" Someone sheepishly raised a hand. "Nobody's saying anything about play," he offered. "I like that," she said, and quickly added it to the list.

Platform scooter proposal
(Courtesy Interdesign 2005 Bicycle Group/
Domenic Giuntoli)

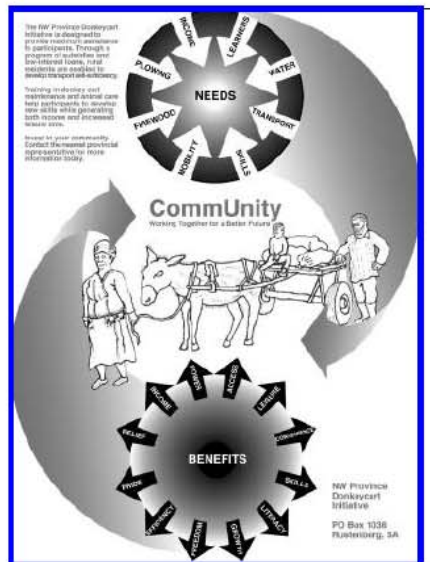


As it happened, every other group was going through the same kind of soul-searching, not so much reinventing the wheel—there actually was a strong bias against that—but learning the group’s strengths and weaknesses through wide-ranging discussions. It was a given that this is the nature of the iterative design process, not to have answers going in, but to discover them through inquiry.

Ria van Zyl, the Communication Group leader, was determined that our group was not meant to be merely a midwife for the other groups’ ideas. She teaches design management courses at the University of Pretoria, and felt that we needed to make a presentation that took communication theory into account. Although some of us were not certain what this had to do with donkey carts and bicycles, let alone transportation, she was the group leader, so we spent the better part of a day preparing charts, graphs, and a talking-point presentation she felt would not embarrass her in front of our 3-D colleagues.

On Saturday of the first week, there was an interminable, four-hour formal presentation of research inquiries at this midway point. The Donkey Cart Group showed sketches, and discussed its interaction with various experts, including a local cart-building cooperative. The Alternative Groups were still in limbo. One, led by German professor George Teodorescu, seemed to be making more of a presentation about the professor’s theories of design education than anything else. The Bicycle Group still hadn’t been to “Pitse.” All in all, Ria made a good presentation. Although it seemed as though we hadn’t accomplished much that week, learning to work together possibly was the greatest hurdle of all. We now took a day’s rest, and resumed our efforts the following Monday.

A needs/benefits analysis informational poster (Courtesy Interdesign 2005 Communications Group/David Stairs).



Day 8: "Are We in the Right Direction?"³

On the second Monday of the Interdesign, some of us were heading back to Pitsedisuleyang with the Bicycle Group. Armed with a questionnaire that included sketches of prototypes, the guys intended to speak to women, men, and learners to find out what interested them in bicycles. I was on a special mission. I had acquired two wall posters, one of the Earth and another of the solar system, and intend to give them to Headmaster Sepato as instructional aids.

When we arrived after the long drive, we divided into three groups and set about our business. Out at Olefile, Mr. Sepato was not expecting us. It seemed that the village representative knew we were coming, but neglected to notify everyone. This crisis was diminished by the fact that we did not need to disrupt all of the classes; the bike guys had decided they only needed six males and six females for their survey.

These handpicked subjects were separated by gender, and then subjected to a lengthy process of explanation. Some of the questions were not clear, while others were repeated throughout the questionnaire. If I had had doubts about the selection process, or the sample size, I now was amazed at the fact that a translator needed to be in attendance coaxing the subjects each step of the way. Some of those questioned were wondering when their new bikes would be delivered, even though no one had made any such promise.

This event revealed one of the weaknesses of the Interdesign. Although numerous experts in transportation and cart building had been collaborating with us; with Marian Sauthoff, a design educator from the University of Pretoria, even speaking to us about the difficulties of working with semi-literate populations, apparently no one thought to include a social scientist, or at least someone well versed in drafting legitimate surveys. This was a little surprising. Designers do not normally have much experience in such matters, but they do employ subcontractors with research expertise to handle the work objectively.

³ "Are We in the Right Direction?" is African vernacular (the word "going" is elided because it is understood).



Data gathering, Olefile SSS. Boys in one room ...



...and girls in another.

It underscored the complexity of planning an event of this magnitude. Each Interdesign, although endorsed by ICSID, must be planned by groups in the sponsoring country. Tanya Smit, Esmé Krueger, and Mme. Viljoen of the Design Institute had done a marvelous job of juggling the logistics for seventy-plus people. But evidence suggests that, despite the inclusion of communication designers, the Interdesigns need to be broadened to include additional specialized professionals. The matter of local participants also requires careful thought. While some of the stakeholders became too comfortable in their roles, expecting special privileges, others, including the schools, received little compensation for the disruption of their scheduled routines.

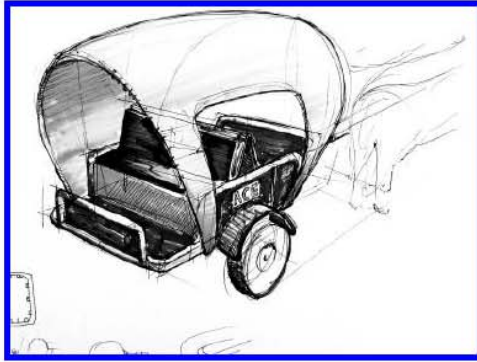
Back in the center of "Pitse," we rejoined the other groups. One group with research fellow Hettie du Plessis had encountered some women healthcare providers who were very interested in the project, and made valuable suggestions for practical design improvements to what was being referred to as "the women's bike." That evening, one of our communication colleagues, Botho Maropefela, spent her time translating the questionnaires so that the bike guys could at last have hard data. It was not in vain. Because of these efforts, our group was beginning to be known as the Translator Group.

Days 11–14: I Donkey NW⁴

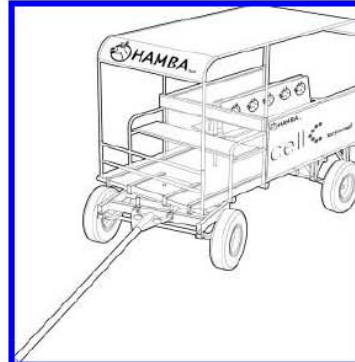
The remaining days of the Interdesign, what the organizers politely called "working toward final presentations," were spent feverishly developing drawings, interpreting questionnaires, returning to Mathopestat one final time to user-test some of our ideas, and refining multimedia shows to present to assembled dignitaries and one another. In the crucible of intense design activity, many friendships were born.

The Donkey Cart Group developed both single- and double-axle cart ideas, as well as a new harnessing scheme, working in close collaboration with the SPCA. The Alternative Modes Groups proposed water-carriers, wheeled stretchers, and various forms of replacements for wheels, including an overhead cable network. The Bicycle Guys learned from their eleventh-hour research that no one likes scooters, and instead focused their efforts on a sensible bike for women, and a goods transporter. In the Communication Group, we opted out of talking points and, employing a marvelous illustration by Christiaan Venter, presented a tour of a "virtual village," complete with many onsite suggestions for promotional calendars, informational posters, educational games, and, yes, a donkey cart brand. While only a few listeners caught our homage to Milton Glaser in our "I Donkey NW" logo, the sentiments found true embodiment in a series of vernacular 'Tswana T-shirts.

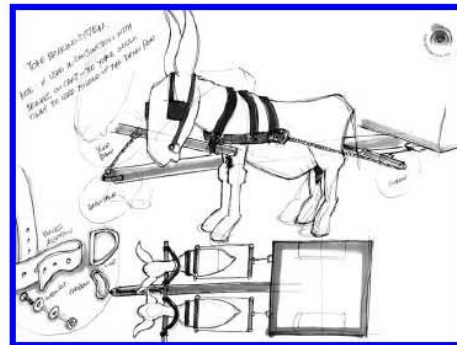
4 Milton Glaser is justly famous for creating the letter/graphic "I (Heart) NY" for the City of New York. The idea, since having entered the public domain with nearly everyone attempting to use it, was here emended slightly.



Single-axle donkey cart with canopy proposal
(Courtesy Interdesign 2005 Donkey Cart Group/Marius Botha)



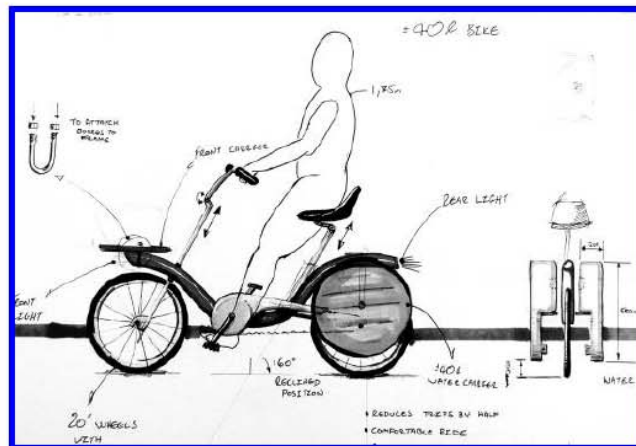
A "Hamba Gx4" double-axle branded donkey cart
(Courtesy Interdesign 2005 Donkey Cart Group and Ukpong E. Ukpong, Moemedi Ramogapi, and Nkosikhona Bongamehlubi)



Donkey cart harnessing scheme
(Courtesy Interdesign 2005 Donkey Cart Group/Chris Bradnum)

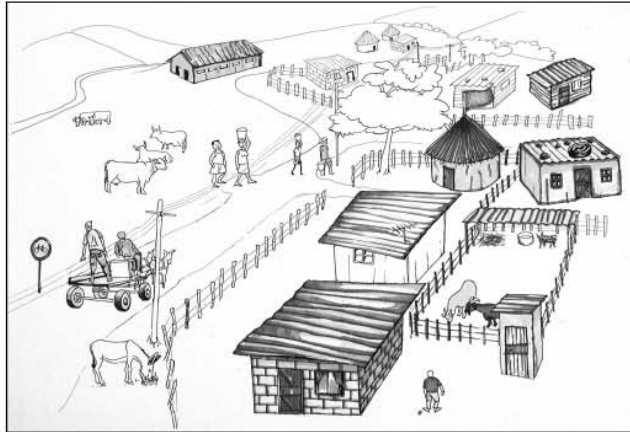


Alternative Mode Groups' water carrier
(Courtesy Interdesign 2005 Alternative Methods Group/Tasos Calantzis)



Women's bike with water panniers
(Courtesy Interdesign 2005 Bicycle Group/Simon Kragwijk, Domenic Giuntoli, Qassim Saad, and Rael Futerman)

The Virtual Village
 (Courtesy Interdesign 2005 Communications
 Group/Christiaan Venter)



Kid's sheet-metal bike
 (Courtesy Interdesign 2005 Bicycle Group/
 William (Morafo, Giovanni Toldo, and Martin
 Boshoff)



Schoolroom poster
 (Courtesy Interdesign 2005 Communications
 Group/Ukpong E. Ukpong)



Donkey NW (Courtesy Interdesign 2005
 Communications Group/David Stairs)



"He Guides Me Through the Night" Tswana
 T-shirt in the vernacular (Courtesy Interdesign
 2005 Communications Group/David Stairs)

The most amazing discovery I made during two weeks in Rustenburg was that there are many talented people who spend their vacation time seeking to help others. This included designers from industry such as Simon Kragtwijk of Philips in the Netherlands, and Domenic Giuntoli from Teague in Seattle. Independent researcher Michael Wolf, a German designer from Capetown, studied the communities of Tonle Sap Lake in Cambodia with his wife, and created a marvelous and informative document. Qassim Saad, an Iraqi refugee, traveled all the way from New Zealand, where he currently teaches industrial design. Niki Dunn of Vancouver developed a nonprofit project in Malawi building bicycle trailers for AIDS victims. Ukpong E. Ukpong of Nigeria was present at the World Social Forum in Mumbai, India in January 2004, and Pierre-Yves Panis, who works for Legrand in France, spent eight years heading a nonprofit in Zimbabwe. These, and many others including students such as Nick Monday, Jason Zawitkowski, and Junko Hosokawa from Virginia Tech, who designed a portable cart as a term project, convinced me once again that design can be employed, like food and medicine, to heal the world's wounded.

Among heartfelt dozens, the best farewell I received came from Mugendi M'Rithaa, a design educator from Kenya. As he enthusiastically pumped my hand while I boarded the bus for Johannesburg International, he said: "Thanks, David, for being part of the solution." The implication was that we Americans too often are a part of the problem.

Aftermath: At the End of the Day, Ramp It Down and Roll It Out

As several participants have told me since my return home, for a brief moment in April 2005, our differences were set aside, and a microcosm of the human family worked diligently using design to try to solve human problems. We did not save the world, of course, and, perhaps, only improved it in the sense that we worked hard not to add to its further distress. But sometimes that is enough.

Is the Interdesign concept effective? This is a hard question. Some of the South African veterans of the 1999 Interdesign on water, jointly held in Mexico, Australia, and South Africa, expressed disappointment at the apparent lack of tangible outcomes from that event, and were determined to avoid the same results this time. The South African Department of Transportation is committed to developing at least two prototype donkey carts. On September 21, 2005, a "Day of Discussion" was held in Pretoria by the Design Institute. It was revealed that three bicycle prototypes have been developed and field-tested by CPUT students at Mathopestat, while students at the University of Johannesburg are working on a low-capacity donkey cart and a z-frame child's bicycle. It is clear that the people at the Design Institute are working overtime, following up on the proceedings in various ways, trying to keep the spirit of the event alive and productive. But many other ideas developed during the two weeks

could be left by the wayside. Can change be generated from outside in as brief a time as two weeks? There is only so much a designer can absorb in a fortnight. It is hard enough dealing with problems such as poverty or epidemic AIDS, if one is part of a society. While the influx of capital generated by people visiting South Africa helps to sustain economic growth, the implications of top-down solutions in even a best-case scenario are problematic.

The repercussions of this Interdesign undoubtedly will continue. Personal relations and professional networking definitely were expanded. And in the optimistic atmosphere of a nascent South African design culture, much more may be possible. Personally, I hope to see, on some future day in Africa, a beautiful South African women's bike, or a sharp-sharp Hamba Gx4 donkey cart, or even a spiffy series of Setswana T-shirts in vibrant colors. If the spirit of Interdesign 2005 is any indication, my wish may come true. Success, as it is commonly understood in northwest South Africa, is the nature of heading "in the right direction." One has only to take the time to get one's bearings, and then move ahead.