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One Axle or Two? Reflections on the Value of an ICSID Interdesign in Rustenberg, South Africa

by David Stairs

I'm back in Africa for the first time since 2002, and for the first time ever in South Africa. The occasion is the 2005 Interdesign for sustainable rural transportation, sponsored by the South African Design Institute, an arm of the South African Board of Standards, or SABS, a parastatal corporation. It's the second effort in six years for the South Africans, who participated in a multinational Interdesign devoted to water in 1999.



South Africa by bus

The Interdesign program first got underway in 1971. Since that watershed year ICSID, the International Council of Societies of Industrial Design, has endorsed 37 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 seems 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. Time was 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 44 million people, lopsidedly divided between a minority of whites, Indians, and mixed race people, and the large majority of blacks(75%), 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. 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 are also unusual diversions like *The Lost City*, Africa's first and most famous theme park, and a booming mall-devel

opment 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, are not Bowery bums, and the self-appointed parkinglot attendants at the malls don't expect more than a few cents for protecting your car from theft, but they do require something.

Nelson Mandela's ascension to the Presidency and the return of major ity 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 is still 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 people live rurally, the government is committed to addressing this issue. In 2004, the government of one of South Africa's nine provinces asked the Design Institute for assistance in the design and development of 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, are transported to the Orion Safari Lodge in Rustenberg, 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.

Day 1: Top-Down Meets Ground-Up

It's Monday morning, 8am, and I'm seated in conference room Jabulani III awaiting the speakers. It's been raining non-stop for two days, and I'm beginning to think I've brought inclement weather with me from gloomy Michigan. Gradually, designers file in and things get underway.

After brief introductions by Design Institute director Adrienne Viljoen and Workshop Design Director Bart Verweckken of the Capetown Polytechnic we're off and running. The majority of the presentations are expert briefings about the events leading up to this gathering by academics, government officials, and design professionals. By 10AM we're already behind schedule, and the proceedings are hastily concluded so we can leave on a field trip to the villages of Mathopestat and Syferbult.



The journey to Mathopestat in large buses takes an hour-and-a-half over paved roads. The rainclouds have finally lifted, and now scud brokenly across a rolling agricultural landscape of 360° vistas. This is “The Cradle of Mankind,” literally the place where humanity arose, and I’m drugged by these views, so typical of vast portions of Africa.

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

This is the first Interdesign jointly endorsed by the new ICSID/ICOGRADA consortium known as the IDA, or the International Design Association. As a graphic design educator, I have been placed in the Communication Group, differentiated from the Bicycle Group, Donkey Cart Group, and Two Alternative Modes Groups. My group has decided

that our initial mission will be to interview students at the local secondary school.

As we enter the classrooms there is much giggling at these “outsiders,” many of whom are foreigners. But make no mistake, although we have come with native colleagues fluent in the local Setswana language, most of these young people speak capable English. As we describe our design brief, asking questions about the learner’s prejudices and preferences regarding transportation, it becomes evident that none of them really understands what design is. We distribute Design Institute publications and discuss the nature of our profession and the educational opportunities available at South Africa’s teknikons.

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

At Syferbult we encounter a very different environment. Here the people squat on the land, and live in very reduced circumstances. The residents signed a contract with the previous owner ten years ago, but now it has become a sad community, devalued by the residents’ fears of eviction threatened by the present owner. The town drunk serenades us with rock-and-roll tunes on his battered guitar for pennies. School-age chil



Arrival in Mathopestat

dren are at home, and there are only one or two vehicles present. Most abodes are made of scrap materials, and working-age men are absent, either at nearby farms, or away in the mines. Some of the young urban South Africans with us have never seen such conditions firsthand and struggle to hide their shock.

Back at the Orion Safari Lodge we spend the evening debriefing and discussing the days' events with our group leader. The young learner's drawings adorn the walls of our studio, and the members of other groups drift in sporadically to look at them. It's been a tiring first day of a long line, with twelve more to go.



Homestead at Syferbult

Day 2: Revolt of the Omnibus Drivers

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

The landscape this day is flat, dotted with a few affluent settlements owned by tribal groups with an interest in the platinum mines. After about an hour we reach the end of the paved road, and begin bumping along washboard. There is reputed to be about 70km of this, but the big Volvo buses seem pretty well suspended. Even as I'm thinking this, we slow to a halt. After a brief consultation, the drivers decide that they cannot proceed without permission from corporate HQ. The buses, it seems, are not really made for dirt roads at all, and the drivers are afraid the vibrations will damage them. We are still more than an hour from Pitsedisuleyang. The Design Director decides that, in order to keep prior appointments, various group leaders and the Communication Group will continue on in a third minibus, and we are spared the two-hour wait before a disappointing return to Rustenberg most of our colleagues suffer this day.

In "Pitse" we are greeted by the young university-educated Chief and his tribal council before dispersing on our various missions. I get an opportunity to drive a donkeycart out to Olefile Senior Secondary School where we recreate the events of our visit to Mathopestat. Here, however, we are informed that learners might travel up to 6km each morning on foot to reach school. This adds another 2 1/2 hours onto the average day, an impediment to both extracurricular activities and family responsibilities.



Tribal elder, Pitsedisuleyang



Headmaster Sam Sepato, Olefile SSS

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

Ironically, one of our group members, Nomfundo Zibi, a fourth year graphic design student at the University of Pretoria, is a young Setswana woman from near Pitsedisuleyang. The students seem especially interested to hear her success story and, as she relates it, for a brief moment, she is better than a rockstar, she is a bona fide role model.

Because of the days' delays, and the fact that our lunches were left back with the main cavalcade, we work right through the afternoon, returning to



Learners at Olefile Senior Secondary School

Rustenberg at nightfall. Following dinner, those who made it to "Pitse" spend about an hour briefing everyone else about what we found. As Bart Verweckken notes, the day was an excellent example of the limits of one form of transport in rural settings. I'm usually a hard worker, but it's obvious this isn't going to be a typical safari lodge holiday. In fact, I'm beginning to wonder whether I can sustain the pace.

Day 3: Little Known but Often Thought About Aspects of the Donkeycart

Wednesday morning arrives and I'm jealously guarding my breakfast from the ever-present dining room staff who hover waiting to pounce on any inactive plate. Today we are scheduled to take a break from field visits to attend another series of expert presentations. These will be made by representatives of both the federal and provincial governments, a woman from the SPCA, builders of bicycles and donkeycarts, and transportation gurus.

Hour after hour we are bombarded by a continuous stream of statistics and images regarding South African transportation, much of it repeating government documents I've already perused. It is obvious that the government has a problem trying to coordinate motorized and non-motorized transportation.

On the highways the two cannot be mixed; there is already a high national accident rate. There also are no standards for donkeycart design. Some carts are being manufactured in South Africa, but they are currently too expensive for most people in deep 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, 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.



Locally made donkey cart, Pitsedisuleyang

Just as the donkey cart situation is beginning to look a little desperate, I get a load of the bicycle scene. In rural areas most school children 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, 76% of South Africa's learners, or about 12 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 4,000 have been distributed. There is currently no bicycle manufacturer in the country. That's a lot of bikes to import from Zimbabwe, let alone Britain or India.

That afternoon and evening the Communication Group meets to brainstorm. Some of the members are restive. "What exactly are we doing? Shouldn't we be developing branding schemes?" they wonder. But with no products to market this is certainly premature. We talk animatedly about the ideas we might develop, and I facetiously ask each of my colleagues to come up with 500 ideas by the next day. They ask me what planet I'm from.

Beneath the humor and bravado I'm troubled by something. So far, there has been little interaction between any of the five groups. This seems a fatal flaw in the process. We're uncertain whether our brief is to do basic communication research, or to assist the other groups with their design efforts. It is decided that we will approach three of the groups tomorrow and offer to collaborate. For me, this decision turns out to be one of the galvanizing moments of the entire event.

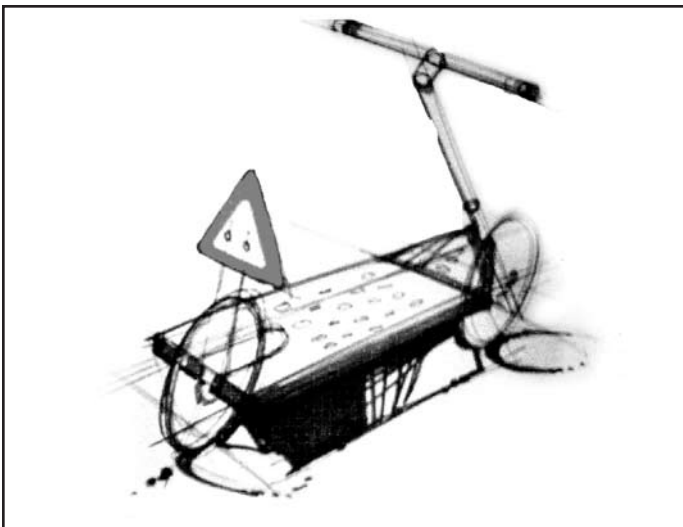


Entrance to the Baefenge General Store

Days 4-6: Process is Our Most Important Product

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 are itching to go to Pitsedisyang. A mini-bus leaves early in the morning with two of the groups. A couple of our Communication Group colleagues, Nkosi Bongamahlibu and Mo Ramogapi, speak Setswana and are recruited as translators for the trip, but the rest of us stick around to attend a morning meeting with the Bicycle Group. This group, the only one composed entirely of men, has been busy developing dozens of sketches for clever new bikes. Trouble is, they haven't done any serious field research yet, and can only argue about which sketches seem best to them.

It becomes immediately apparent that Roelf Mulder, group leader and co-designer of the *Freeplay* wind-up radio, is extremely interested in what our Com



Platform scooter proposal

munications Group colleague Retha Claasen-Veldsman has to say. Everyone wants to make sure that women's needs are being addressed since women in Africa, especially in poorer areas, bear much of the burden of menial tasks like carrying water and foraging for firewood. The Bicycle Group has been focused on materials. Two nice ideas, one for a bike made of sheet metal and another for a scooter, have been proposed. The question is, will they be accepted?

One of the problems we've been alerted to be sensitive to is traditionalism. Some forms of transport will be considered appropriate for men, others for women. Social values instilled

in childhood carry over into adulthood. New ideas are often rejected out of hand as being too radical. People like to see a thing in use before they'll accept it as a new possibility and, in the case of scooters, there isn't really any available precedent. We leave the "bicycle guys" convincing them that they need to develop a thorough questionnaire to take to the field with them when they go.

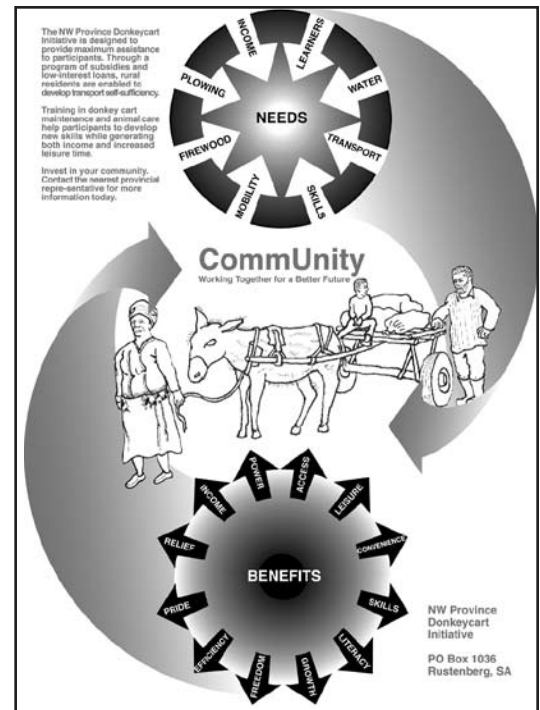
In another room, this one belonging to the Alternative Methods Group led by distinguished Indian design professor and bamboo expert MP Ranjan, the air is thick with speculation. Professor Ranjan has asked the members of his group to describe their expectations. Award-winning South African designer Tasos Calantzis politely declines. "I'm not ready to make that commitment yet," he says. Canadian designer Sue Fairburn stands at an easel fielding free associations from her peers as the group slogs through a typical instance of ground-up design process. In a design situa

tion where many of the participants are affluent outsiders, there's a good deal of self-consciousness over the top-down, imposed design failures of the past. As Sue coaxes a clarification from the group she asks, "But what else can we say is important?" Someone sheepishly raises a hand. "Nobody's saying anything about play," he offers. "I like that," she says, and quickly adds it to the list.

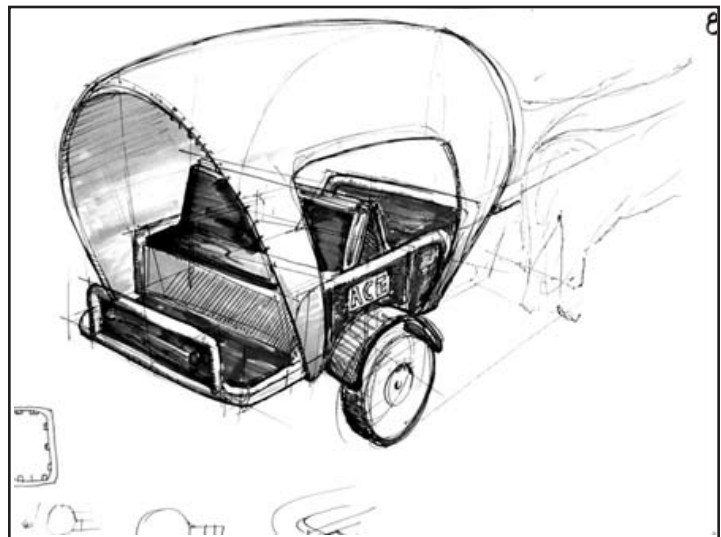
As it happens, every other group is going through the same soul-searching, not so much reinventing the wheel— there's actually a strong bias against that here— but learning the group's strengths and weaknesses through wide-ranging discussions. It's a given that this is the nature of the design process,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

Ria van Zyl, the Communication Group leader, is determined that our group is not meant to be merely a midwife for the other group's ideas. She teaches design management courses at the University of Pretoria and feels we need to make a presentation that takes communication theory into account. Although some of us aren't certain what this has to do with donkey carts and bicycles, let alone transportation, she's the group leader, so we spend the better part of a day preparing charts, graphs, and a talking point presentation she feels won't embarrass her in front of our 3-D colleagues.

On Saturday of the first week there is an interminable four-hour formal presentation of research inquiries to this midpoint. The Donkey Cart Group shows sketches, and discusses their interaction with various experts, including a local cart-building cooperative. The Alternative Groups are still in limbo. One, led by German professor George Teodorescu, seems to be making more of a presentation about the professor's theories of design education than anything else. The Bicycle Group still hasn't been to "Pitsu." All in all, Ria makes a good presentation. Although it seems we haven't accomplished much this week, learning to work together is possibly the greatest hurdle of all. We will now break for a days' rest, and resume our efforts on Monday.



A Needs/Benefits donkey cart informational poster



Single-axledonkey cart with canopy proposal

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

On the second Monday of the Interdesign, some of us are heading back to

Pitsedisuleyang with the Bicycle Group. Armed with a questionnaire that includes sketches of prototypes, the guys intend to speak to women, men, and learners to find what interests them in bicycles. I'm on a special mission. I've acquired two wall posters, one of the earth and another of the solar system, and intend to give them to Headmaster Sepato.



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

When we arrive after the long drive we divide into three groups and set about our business. Out at Olefile, Mr. Sepato is not expecting us. It seems that the village rep knew we were coming, but neglected to notify everyone. This crisis is diminished by the fact that we don't need to disrupt all the classes; the bike guys have decided they only need six males and six females for their survey.

These hand-picked subjects are separated by gender, and then a lengthy process of explanation ensues. Some of the questions are not clear, while others repeat across the questionnaire. If I had doubts about the selection process, or the sample size, I am now amazed at the fact that a full-on translator needs to be in attendance coaxing the subjects each step of the way. Some of those questioned are wondering when their bikes will be delivered, even though no one has made any such promises.



...and girls in another.

This event reveals one of the weaknesses of the Interdesign. Although numerous experts in transportation and cart building have been collaborating with us, and Marian Sauthoff, a design educator from the University of Pretoria, even spoke 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 is 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.

It underscores 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 have done a marvelous job of juggling the logistics for seventy-plus people. But evidence does suggest that, despite the inclusion of communication designers, the Interdesigns need to be broadened to include additional special

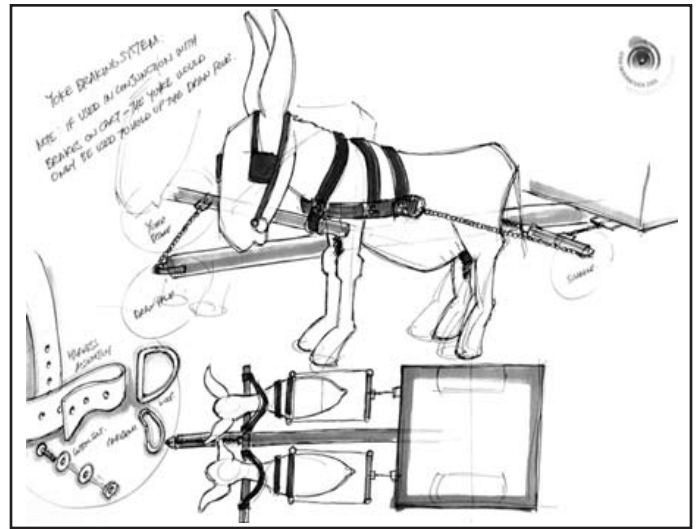
ized professionals. The matter of local participants also requires careful thought. While some of the stakeholders become too comfortable in their roles, coming to expect special privileges, others, like the schools, receive little compensation for the disruption of their scheduled routines.

Back in the center of “Pitse” we rendezvous with the others. A group with research fellow Hettie du Plessis has encountered some women healthcare providers who were very interested in the project and made valuable suggestions for practical design improvements to what is coming to be called “the women’s bike.” This evening, one of our colleagues, Botho Maropefela, will spend her time translating the questionnaires so the bike guys can at last have hard data. It’s not in vain. Because of these efforts our group is beginning to be known as the Translator Group.

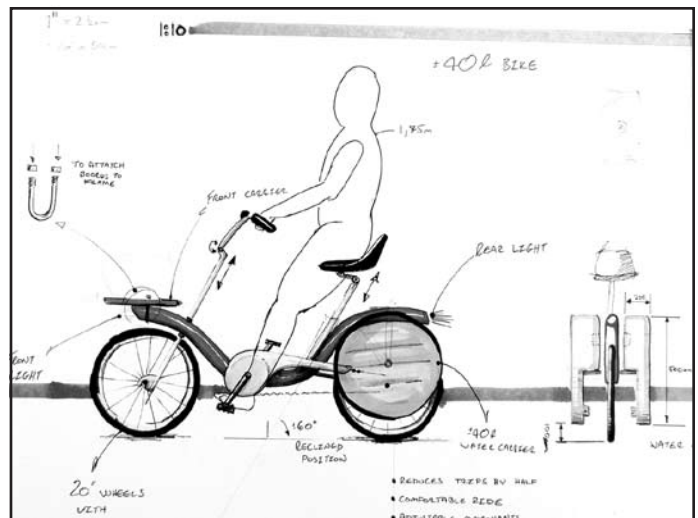
Days 11-14: I Donkey NW

The remaining days of the Interdesign, what the organizers politely call “working toward final presentations,” are 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 are formed.

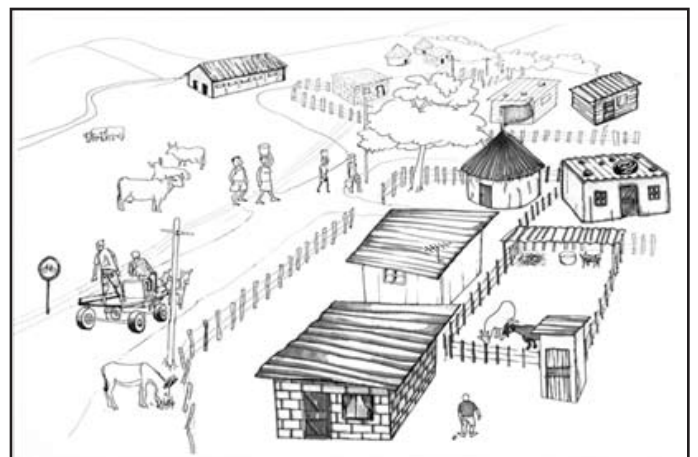
The Donkey Cart Group develops both single and double-axle cart ideas, as well as a new harnessing scheme working in close collaboration with the SPCA. The Alternative Modes Groups propose water-carriers, wheeled stretchers, and various forms of replacements for wheels, including an overhead cable network. The Bicycle Guys learn from their eleventh-hour research that no one likes scooters, and instead focus their efforts on a sensible bike for women, and a goods transporter. In the Communication Group we opt out of talking points and, employing a marvelous illustration by Christiaan Venter, present a tour of a Virtual Village, complete with many on-site suggestions for promotional calendars, informational posters,



Donkey cart harnessing scheme



Women's bike with water panniers



The Virtual Village



Alternative Modes Group's water carrier



Schoolroom poster

educational games, and yes, a donkey cart brand. While only a few listeners catch the homage to Milton Glaser in our "I donkey NW" logo, the sentiments find true embodiment in a series of vernacular 'Tswana T-shirts.

The most amazing discovery I make during two weeks in Rustenberg is that there are many talented people who spend their vacation time seeking to help others. This includes those from industry like 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 the Tonle Sap lake of Cambodia with his wife and created a marvelous and informative document. Qassim Saad, an Iraqi refugee, travelled all the way from New Zealand, where he currently teaches industrial design. Niki Dunn of Vancouver developed a non-profit 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 non-profit in Zimbabwe. These, and many others, including students like Nick Monday, Jason Zawitkowski, and Junko Hosokawa from Virginia Tech, who designed a portable cart as a term project, convince me once again that Among heartfelt dozens, the best farewell I receive comes from Mugendi M'Rithaa, a design educator from Kenya. As he enthusiastically pumps my hand while I board the bus for Johannesburg International he says, "Thanks David, for being part of the solution." The implication is that we Americans are too often a part of the problem.

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

As several participants have observed to me since my return, for a brief moment in April 2005, our differences set aside, a microcosm of the human family worked diligently using design to try to solve human problems. We didn't save the world, of course, 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 difficult 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 has committed to developing at least two prototype donkey carts by Septem

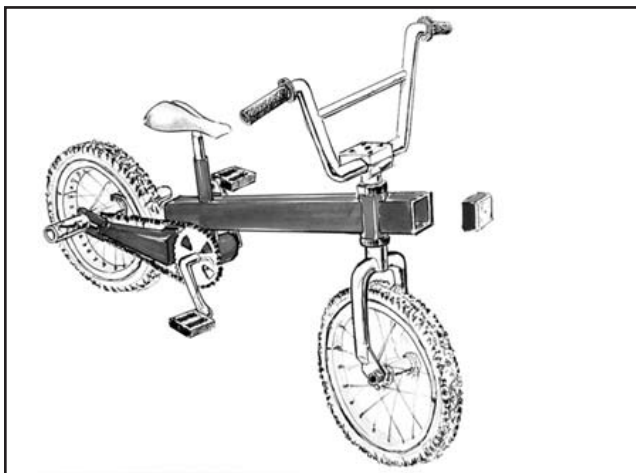
ber 2005, and the people at the Design Institute are working over time following up the proceedings in various ways, trying to keep the spirit of the event alive and productive. But many other ideas developed during the two weeks could be left by the wayside.

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 like poverty or epidemic AIDS if one is part of a society. While the influx of capital generated by people visiting South Africa helps sustain economic growth, the implications of top-down solutions in even a best-case scenario, are problematic. The repercussions of this Interdesign will undoubtedly continue to resound. Personal relations and professional networking definitely expand. And in the optimistic atmosphere of a nascent South African design culture much more may be possible.

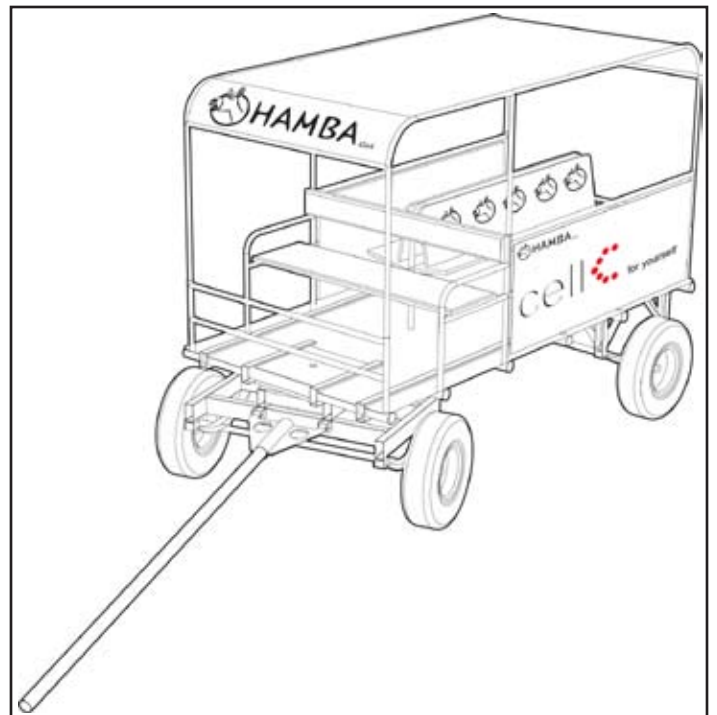
Personally, I would hope to see, on some future day in Africa, a beautiful South African Women's bike, or a sharp-sharp Hamba Gx4 donkey cart, or even a spiffy series of Setswana T-shirts in vibrant colors. If the spirit of Interdesign 2005 is any indication, my wish may come true. Success, as it is commonly understood in Northwest South Africa, is the nature of being "in the right direction." One has only to take the time to get one's bearings, then move ahead.



"He Guides Me Through the Night" Tswana T



Kid's sheet metal bike



A "Hamba Gx4" double-axle branded donkey cart