

2007 AMD OPEN ARCHITECTURE CHALLENGE | ASIA
DESIGN BRIEF

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ASIA

| Challenge |

Enable families in a remote rural area of Nepal where there is only one doctor for a population of 250,000 to access healthcare from top physicians and medical professionals all over the world by building a telemedicine center.

Location: Sanfe Bagar, Achham, Nepal

| Client |



Client: Nyaya Health

Client Web Site: <http://www.nyayahealth.org/>

Client Description: Nyaya Health is a community-based healthcare organization providing maternal and child health services to poor patients in the districts of Achham and Doti, Nepal. We provide free health services to an area of 440,000 people. About 740 out of every 100,000 women die in childbirth in this region. We have assembled a group of local community healthcare workers and midwives, who operate under a community-based board of directors, to provide antenatal and obstetrical services to women and children in this area. Our organization was recently recognized as a “model initiative” by the UN Development Program. In addition, our organization has produced a cross-border alliance with U.S. physicians to provide voluntary specialty services for severe health problems faced by people in this area; we need to establish a telemedicine center to take advantage of this alliance and provide consistent services.

Last updated: September 11, 2007



Registration Begins: 09/12/2007
Submissions Due: 01/15/2008

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End-users: The clinic will serve a staff of 10 healthcare workers and 7,700 beneficiaries.

Need: This community is the poorest location in the poorest country in Asia. Most men are gone for 9 months of the year, because they migrate to work across the border in India (where they often acquire HIV). Women and children, often unsuspectingly infected with HIV, are left to tend to agricultural plots. However, poverty has been increasing in this area because of illnesses among women and children, preventing them from working or being able to attend school. We provide crucial health services to this area. However, our ability to provide services has been limited by (1) the lack of expertise to deal with increasing burdens of complicated infections, which “first world” doctors have the expertise to treat, (2) limited ability to regularly order supplies and pharmaceuticals from international shippers (since Nepal has limited drug manufacturing facilities) because we lack internet access, and (3) limited ability to facilitate training of local healthcare workers, who need internet access to attend online trainings. We have partnered with physicians at Yale School of Medicine, Harvard Medical School and University of California San Francisco, who have agreed to provide voluntary expert consultations and access to Yale’s online medical resources if we develop tele-medicine facilities.

The clinic serves 7,700 patients per year on average. We estimated 20% of that population needs medical consultations via telemedicine services. There are no other healthcare facilities in the region. In addition, the facility would greatly benefit our staff of 10 healthcare workers, who would receive much greater training to assist them in providing health services.

| Program |

Competitors are challenged to design a telemedicine/health facility and a community technology center for the local NGO, Nyaya Health. Located in the rural town of Sanfe Bagar in the Achham district of western Nepal, this facility will provide medical services to the town and surrounding villages.

In the region there is one doctor for every 250,000 people, and this telemedicine center will allow staff from Nyaya Health to provide access to medical expertise from around the globe.

The proposed facility will allow local healthcare workers to:

- provide more accurate diagnosis and treatment via telemedicine consultations and training sessions with international physicians
- communicate reliably and regularly with U.S. physicians who will provide interpretations of X-rays, laboratories and drug susceptibility assays
- provide internet access to medical databases and training programs to optimize patient care
- access open-source software packages designed to facilitate the rapid procurement of pharmaceuticals and medical supplies
- provide computer training and internet access to the community at-large
- provide a public gathering space for the exchange of health information and other community services

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Design Considerations:

Participants are challenged to incorporate the needs of the community and to employ sustainable and/or local building material using local labor to realize their design. Designers should also take into account the remote nature of the site and costs associated with transporting materials in developing their designs.

Space Considerations:

Approximately 40% of the building will be open to the public and used as a community computer lab and training facility. The other 60% of the building will be dedicated to the provision of medical services including, obstetric and nursing training; telemedicine exchanges and X-ray interpretation with overseas medical professionals; patient consultation; and offices to manage medical files and order pharmaceutical supplies.

The facility should include:

Telemedicine Center

Site area: 2 acres

Estimated total facilities footprint: 175 m²

Maximum occupancy: 40

Medical Components

- counseling rooms (2)
- administrative office (1)
- multi-purpose meeting room/break room
- server closet
- AV telemedicine consultation/training room
- multi-purpose meeting space for health professionals
- storage/pharmacy

Community Components/Public Space

- community library
- multi-purpose gathering space
- community computer lab

| **Site** |



| **Environment** |

Climate: Alpine

Temperature: 10-24°C /50 -75°F

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Rainfall: 50 inches /1256mm per year; Nepal experiences monsoon rains from June to September

Latitude: 29N

Longitude: 81E

Special Conditions:

Earthquakes, epidemics, fires, landslides and debris flow, floods, hailstorms, thunderbolts and windstorms. Every year, mainly during the monsoon, landslides and debris flow cause damage to agricultural land and human settlements.

| **Construction Budget** |

Total Construction Budget: \$32,000 USD

| **Sponsors** |

About 50x15

The 50x15 Initiative, launched by AMD in 2004 at the World Economic Forum, is a bold and far-reaching effort to develop new technology and solutions that will help enable affordable Internet access and computing capability for 50 percent of the world's population by the year 2015. More than just goodwill, 50x15 is about fostering long-term economic progress and investment within high-growth markets in ways that benefit a wide range of people and businesses. For more information, visit www.50x15.com.

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Architecture for Humanity is a 501(c)(3) charitable organization that seeks architectural solutions to humanitarian crises and provides design services to communities in need. Currently it involved in the reconstruction of homes on the Gulf Coast, rebuilding after the South Asia Tsunami and the construction of health-care facilities in Sub-Saharan Africa. For more information, please visit www.architectureforhumanity.org.

About the Open Architecture Network

The Open Architecture Network is an online, open source community dedicated to improving living conditions through innovative and sustainable design. For more information please visit: www.openarchitecturenetwork.org.