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Abstract

Efforts to bridge the digital divide have concentrated on community computer centers dependent on subsidy and constant supervision. This thesis considers the design of public digital interfaces that are physically and financially autonomous while establishing an adaptable structure for community networking. These pedestrian interfaces generate income from retail and advertising already common on our streets. In turn they can provide free wireless networking and serve as community computer centers. The network of public computers is targeted to travelers along existing transportation infrastructures: streets, highways, train and bus lines. By offering services such as directions, e-mail, job-searching and web-surfing, these computer centers will provide incentive to develop digital literacy. The interfaces are climate-controlled secure street shelters. Many include a small store, an automated vending machine or a public bathroom. A flexible system of wireless input and output modules allow each interface to take on a number of public and private uses through the course of a day. The small buildings adapt continually to a user’s needs to create an accessible, intuitive interface. The pedestrian interfaces are suited to current technology, and the ergonomic envelope is designed to accommodate future technologies as they become feasible.
Autonomous pedestrian interfaces are a vocabulary of street furniture that augments traditional sidewalk interfaces through digital technology. The interfaces are programmable multimedia spaces dispersed throughout a city to bring about a truly networked urban community. The buildings act as dynamic multimedia displays for pedestrians and traffic. A translucent display shell doubles as the structure of the building. Once within, ergonomic interfaces adjust to a user’s need to provide the simplest possible interface for that particular encounter. Walls, ceiling and furnishings are entirely programmable to suit the needs of users throughout the day. All central functions are isolated to a modular spine in the ceiling. Heating, cooling, sound and video can be targeted from the central spine to an individual or group. The digital components communicate wirelessly and feed off of a power supply embedded in the building skin. The rugged, vandal-proof shell is embedded with electro luminescent film that charges during the day and emits a soft glow at night. The glowing object acts as a sidewalk beacon while providing an inexpensive substrate for advertising posters. The simple form is derived from a convergence of computer-human interfaces ranging from collaborative (picnic bench) to relaxing (bar/lounge). By offering the greatest variety of social interfaces these meeting places can help to generate a sense of community, both virtual and real.
design research
arcade game as intuitive interface

street computer
community multi-tasking

multi-task interior
community computer center
display awning
integrated photovoltaics

space of projections
interface scenarios
glow: mylar over an acrylic frame
pattern: printed mylar on a chipboard frame
bus shelter a
bus shelter b
community multi-tasking
butcher shop
social scenario
day/night
12'-6" long
1 vending
3 interface seats
1 picnic interface

17'-6" long
4 vending
4 interface seats

22'-6" long
1 newsstand
3 interface seats
2 picnic interface
1 accessible bathroom
final design
autonomy: evaporative cooling, infrared heating, bullet-proofing
community networking: wireless hub dispersion along transportation infrastructure
three skins: sandblasted PETG
3 times of day: conventional, mixed, interface
bus shelter with automated vending
automated teller kiosk
sponsored public restroom
newsstand & bus shelter combination
information kiosk
information kiosk interior: adjustable interfaces with printing modules
detail: interface

- injection-molded fiber-reinforced plastic shell
- stainless steel keyboard
- stainless steel rack and enclosure
- wireless transmitter + motor controller
- redundant DC stepper motors w/ electronic braking
- stainless steel gear + shaft assemblies
detail: I/O lantern
detail: skin

- **PROTECTION**
  - Graffiti Release
  - UV Resistant
  - Clear Urethane
  - Triangle Coatings

- **GLOW**
  - Electroluminescent film

- **POWER**
  - Amorphous silicon solar cell

- **STRUCTURE**
  - 3 layers woven glass fiber in clear epoxy

- **WIRING**
  - Conductive woven copper tape

- **PROTECTION**
  - Graffiti Release
  - UV Resistant
  - Clear Urethane
  - Triangle Coatings

**ASSEMBLY**
- fiberglass layup
- wiring and power
- braiding
- delivery
detail: kit of parts

RETAIL
hot dog stand
newstand
bar
vending machines

BATHROOM
ADA-accessible
self-cleaning

COMMUNITY CENTER
computer clubhouse
neighborhood clinic
first aid station
homeless shelter

SEAT INTERFACE
fully adjustable

PICNIC BENCH INTERFACE
capacitance sensor in table

ATM/MAILBOX
newspapers/vending
trash/recycling
newsstand & bus shelter
automated teller kiosk
bus shelter


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Bulletproof fiberglass: www.armorcore.com

Electroluminescent film: www.luminousfilm.com

Kiosk keyboard: www.rafi.co.uk

Anti-graffiti coating: www.tricoat.com

Automated luminaries: www.highend.com

 Directed Audio: www.holosonics.com
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