

1860: Gas and coal tar production started at the turn of the century and was followed various industrial factories.

1889: South Metropolitan Gas works opened; closure of the works in 1985.

1960: Container shipping started.

1981: Docklands Development Corporation was created to manage the redevelopment of waterfront areas.

1990: 13,000 new dwellings built. Huge new commercial center built at Canary Wharf.

1996: The Richard Rogers Partnership won a competition for the master planning of new sustainable community.

1996: Rogers designed Millennium Dome which opened January 1, 2001.

1997: Ralph Erskine, in collaboration with Hunt Thompson Associates, won design competition.

1999: Greenwich Millennium Village began construction.

2002: First phase completed. Apartments included the ecological park, large artificial lake, and school and health center designed by Edward Cullinan.

Architects Stephen Proctor and Andrew Matthews have been responsible for the second phase, which consists of 450 residential units arranged around three garden squares.



History of the Project





The Greenwich Millennium Village is located on the Greenwich Peninsula, was polluted by industry, and populated by unused areas of car park and empty roads.

Architect Ralph Erskine created a master plan that set new standards of sustainable architecture and planning.

His innovative plan integrates homes, roads, services, shops, transport, and leisure facilities into an ecologically friendly whole.

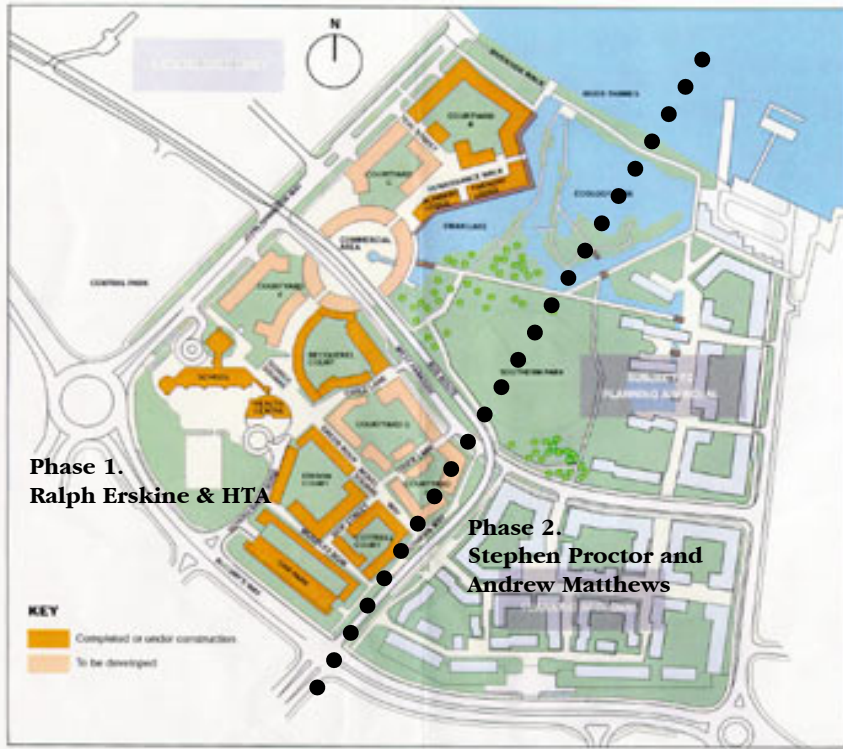
The plan works for the people and, with the individual at its center, the village is human in scale. The village attempts to create a more intelligent way of living using the latest environmentally friendly technologies.

Erskine set technical targets such as reduction in energy, water consumption, domestic waste, car use and construction waste, and construction and maintenance costs.



Introduction





Surroundings



Eco-Super Store, Sainsbury's, Chetwood Associates



Millennium Dome, 2001, Richard Rogers



Elementary School

- Site Area: 72 acres (29 hectares)
- Floor area: 33,469m²(residential), 4,500m²(commercial)
- Units: 79 apartments+298 single, detached houses
- Density: 172 rooms/acre
- Parking Spaces: 1,435
- Stories: 4–13 stories
- 1–3 bedroom flats and maisonettes housing type



Land Use Plan



Courtyard type is one of the classic London “garden square” concepts.

Dramatic elevations of barrel-vaulted roofs, using traditional materials, adding Erskine's trademark color and texture.



- Progetto per il Greenwich Millennium Village

- 1 Pedestrian Walkway to Millennium Dome
- 2 Community Center/Telecommunications Center
- 3 Artificial Lake and Water Reservoir
- 4 Garden Square and Underground Parking
- 5 Public Facilities, CHP



Elevations

To maximize connections to the environment, they enjoy balconies, terraces, or sundecks, some fronting the lake, others with dramatic views toward the Thames Barrier.

Express a strong vernacular context and views from the waterfront.



**Erskine's
Color**

Along with the extensive use of glass, materials include split bricks contrasted with colored plaster, corrugated panels, wood cladding, and zinc sheet.

The colors help break down the scale of the façade.



Landscape in the Courtyard



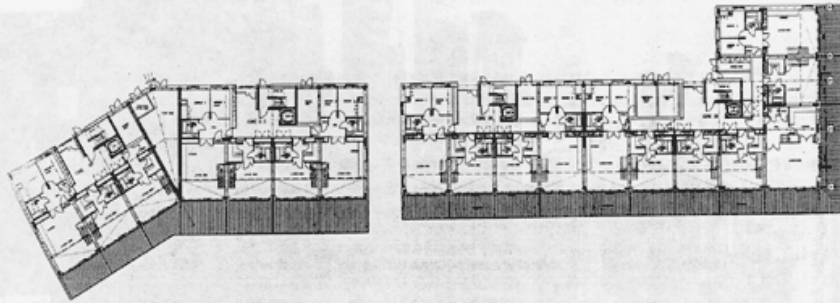
Pedestrian Walkways



Greenwich Yacht Club Ecology Park



Pedestrian Network to the Millennium Dome



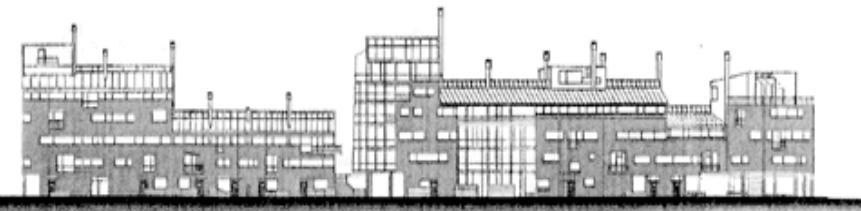
Block Floor Plan



Bathroom



Living Room



Block Elevation

Occupants can customize their apartments with sliding interior walls.

The light and spacious Scandinavian interior design features full-height windows and some double-height rooms.



Phase 2 Model



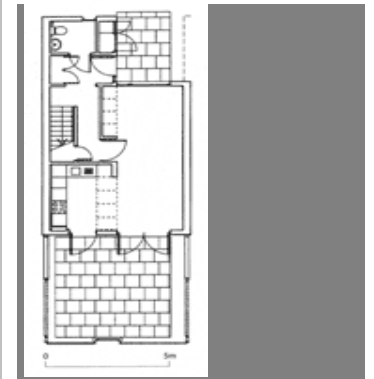
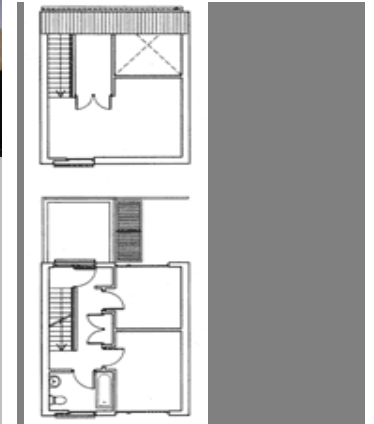
Townhouse Model



Pedestrian Walkway



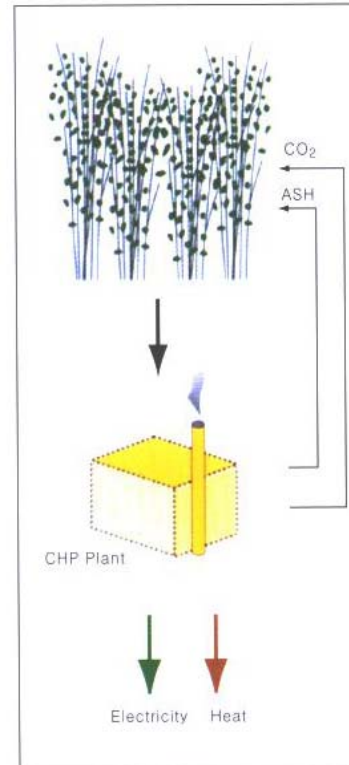
Sun Shadings



Townhouse Plan

Phase 2 Architects: Stephen Proctor and Andrew Matthews

- Reduction of water consumption by 30%.
- 30–40% of the wood and aluminum construction waste was recycled.
- The concrete frame provides a thermal mass, reducing energy consumption. Aluminum was chosen for its recycling qualities and long life.
- Cedar for the rain screens was obtained from sustainably harvested sources and has an excellent maintenance record. These cedar louvers are also sun shades and windbreaks, and they provide the gardens with visual privacy.
- Take maximum advantage of climatic factors. The buildings were purposely shaped and positioned to moderate the effect of easterly winds and to make full use of the sun for both light and heat.
- The 80% reduction in energy is achieved through a combination of local electricity generation, improved insulation, and energy-efficient devices.
- To generate its own power locally, the village uses a combined heat and power (CHP) system, which provides central heating, hot water, and electricity.
- Greenwich Millennium Village saves £150,000 by cutting construction waste.



Seeking Sustainability

Water Reduction Components:

	Water Saving	Cumulative Saving
Efficient Showers	3%	3%
Efficient dishwasher and Washing Machine	5%	8%
Efficient Taps	4%	12%
Dual Low Flush Water Closets	9%	21%
Grey Water Recycling	14%	35%

• Site Selection

Restored contaminated industrial land
Rehabilitated brownfield

• Transportation

Public transport system (shuttle bus) located at center of residential area within five minutes walk
Jubilee line and South Eastern Railway located near the site
Workable street, Green corridors, and pedestrian network
Residents' participation in community development
Founded village trust for management and maintenance

• Site Development

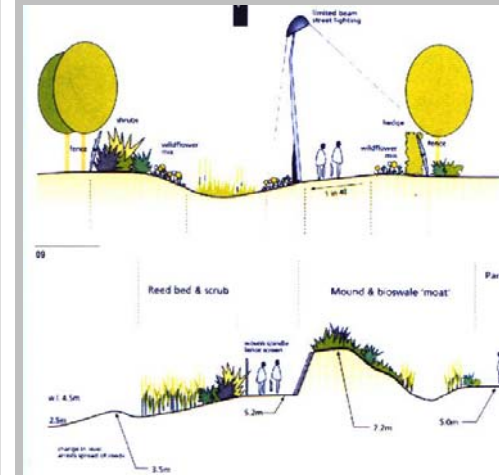
Preserve existing ecology and animal habitat
Provide a diverse complex of wetland habitats

• Urban Design

Plan for mixed-use commercial, business, and residential area
Segregation of vehicles and pedestrians
Priority is given to pedestrians and cyclists.
Bike storage
Support carpooling or vanpooling
Reduce the visual impact of parked cars by locating them under the landscaped courtyards.



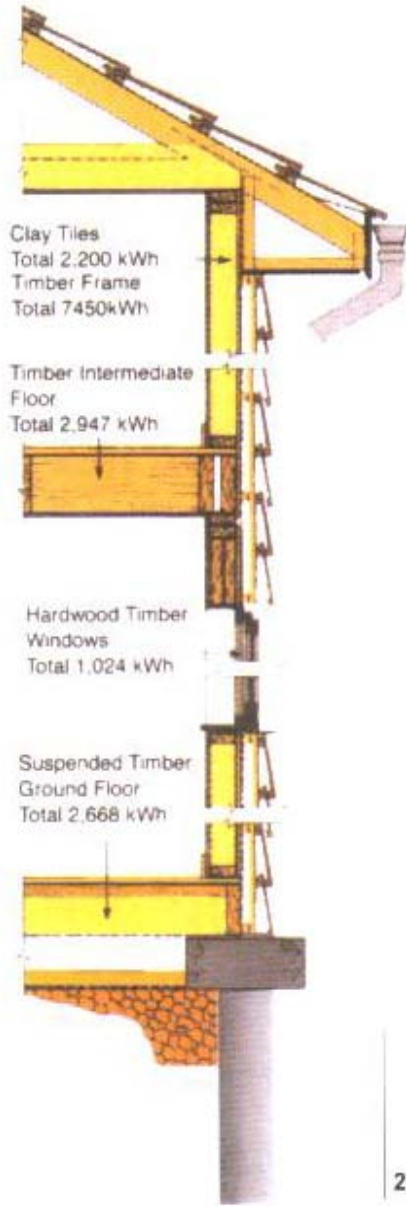
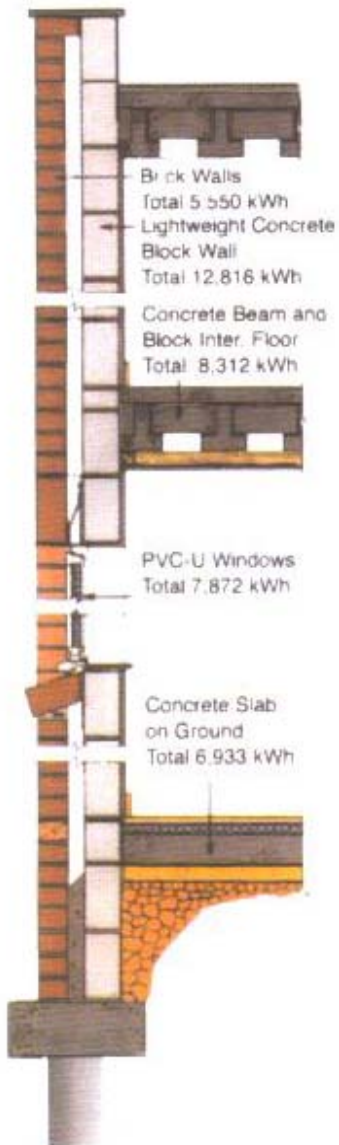
Transportation



Cycling Route and Biotope Concept



**Sustainable
Approaches:
Site
Development**



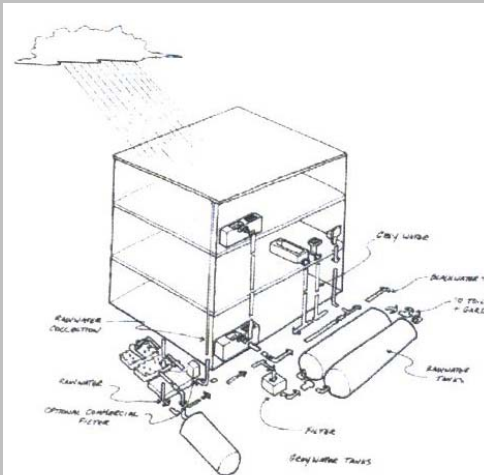
High Efficient Insulation Wall



- Improved insulation
- 80% reduction in primary energy consumption
- 50% reduction in energy use
- Renewable energy, such as wind and solar sources
- Selection of sustainable materials, with preference for local materials
- Low-energy embodied materials, 50%
- Potable water use reduction by 30%
- Comprehensive water management system
- Combined heat and power plant which was to have used biomass fuel.



Sustainable Approaches: Energy and Resources

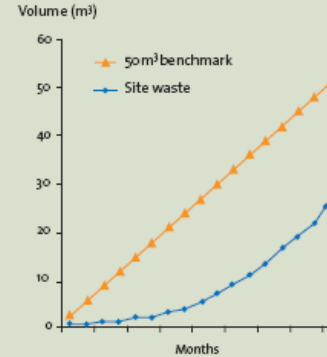


Rainwater Collection

- Zero CO₂ emission material, construction methods, and building operation
- Minimized solid waste during construction and building operation.
- Make sure that responsibility for individual wastes.
- Separation of specific waste
- Reduction in on-site waste (50%)
- Building waste recycling (80%)
- Cleaning and recycling of gray water by the natural circulating system in wetlands, ponds, and reservoir.
- Conserve existing natural, restore damaged land to promote biodiversity.
- Hill walk and bank for protecting winter wind and preserving natural ecology



CHP Plant on the Site



Waste profile per dwelling against benchmark

Construction Waste Reduction

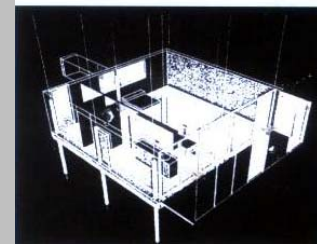
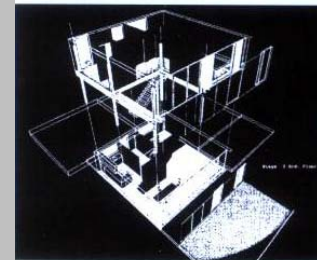
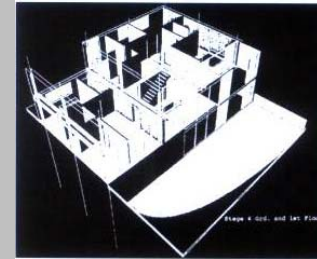
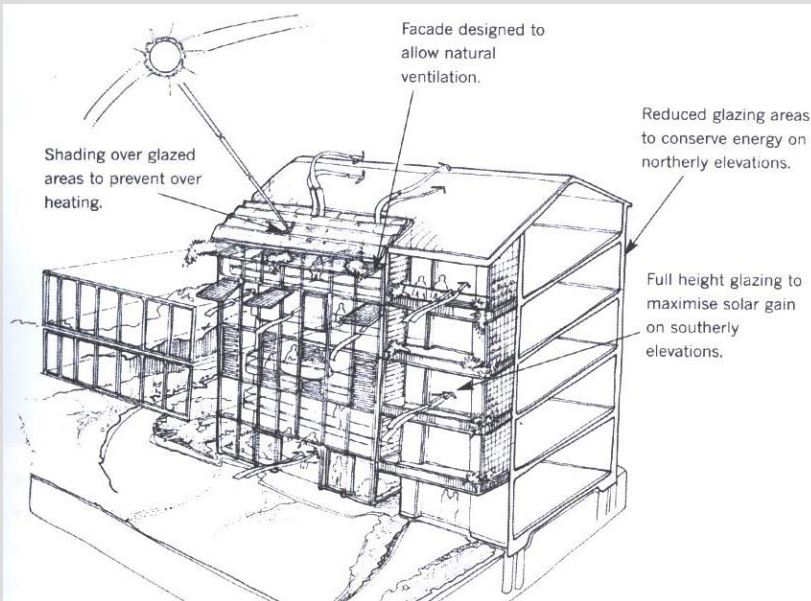


Concept Drawing of Gray Water Recycling



**Sustainable
Approaches:
Environmental
Loading**

- Low Emission Zone to control parking
- High efficient mechanical building equipment
- High perimeter walls to protect from harsh winter winds
- Small windows and dense wall on the north side
- The south sides open to the sun with expansive windows, covered galleries, and balconies
- Natural lighting plan
- Appropriate shading devices
- Carefully laid out to reduce to a minimum traffic noise by double-glazing, buffer zone



Sustainable Approaches: Indoor Environment & Humanity



- Home office
- Adjustable and flexible plans according to life cycle
- Revolution in the design of homes exploiting intelligent systems
- Virtual village and exhibition on aspects of sustainable urban communities using internet.

What is the program delivering?

6,000 quality new homes by 2010

Nearly 9,000 new homes in total

More than 70,000 sq m commercial floor space

More than 1,000 new jobs

Over £770m private sector investment attracted

£165m investment by English partnerships

Five new primary schools, one improved pre-school, and one secondary school

Seven new community buildings

Three new health centers

References

Barker, Don. "Erskine's Millenium Village." 10 April 2002.

Davey, Peter. "Ecological Propriety." *Architectural Review*.

Greenwich Millennium Village. 2002.

<<http://www.greenwich-village.co.uk>>

<http://www.architectureweek.com/2001/1128/design_1-1.html >

<<http://www.designforhomes.org/had/2001/projects/millenum/millmain.html>>

<<http://www.gold.ac.uk/world/millen/planning/ecovillage.html>>



How Do We Get There?

Time	Details	Maps	Information
00:18	start Regent's Park Take the Bakerloo Line towards Waterloo or Bakerloo Line towards Elephant & Castle	start map end map area map	Avg Journey time: 9 mins Zone(s): 1
00:27	Waterloo Take the Jubilee Line towards Stratford	start map end map area map	Avg Journey time: 15 mins Zone(s): 1, 2
00:33	North Greenwich Walk to North Greenwich Station	start map end map area map	Transfer time: 5 mins
00:48	North Greenwich Station Stop: A Take the Bus 486 towards Bexleyheath Shopping Centre or Bus 472 towards Thamesmead Town Centre or Bus 161 towards Chislehurst War Memorial	start map end map	Buses every: 4 - 7 mins Max Journey time: 11 mins
01:04	end Millennium Village South		

Maximum journey time: 00:46

