Programme Title

Sustainable Construction in Public and Private Works through IPP approach

Acronym

SUSCON

Project No

LIFE05 ENV/GR/000235

Report

SUSCON Ecodesign Matrix & Checklist

Leading Partner: NTUA

29 March 2007

Final Version

Versioning and contribution history

Version	Description	Comments
Final	SUSCON Ecodesign Matrix & Checklist Report	Final Edition

SUSCON Ecodesign matrix and checklist

Siting

1	Brown field development (land use)
2	Access to puplic transportation and alternative trasportation means
3	Conservation of native vegetation during construction (erosion control)
4	Minimize site disturbance (clearing and soil movement) - restoration of disturbed soil and vegetation
5	Minimize impervious surfaces (redused runoff)
6	Construction must not divert water runoff from it's natural paths
7	Prevent soil and air pollution during construction process
8	Reduse reflective surfaces and use shading technics (native vegetation) to minimize heat island effect in urban areas

Energy

SITE DESIGN & BUILDING ORIENTATION

1	Building orientation
2	Site design to take advantage of solar and topographic conditions
3	Construction designed for use of passive solar technics

BUILDING ENVELOPE

1	Insulated exterior windows and doors framing
2	Install double glazed windows
3	Install Low-E windows
4	Insulated floor, ceiling,roof and exterior walls
5	Seal at all mechanical penetrations
6	Seal all attic penetrations
7	Specify construction materials and details that reduce heat transfer.

FOUNDATION SYSTEMS

1	Reinforced structural concrete slab with rigid insulation below concrete slab
2	Permanent insulation to the foundation
3	Frost-protected shallow foundation
4	Insulated basement walls with spray foam insulation from footer to top of wall

LIGHTING

1	Installation of Energy Star Qualified fluorescent bulbs (CFLs)
2	Advanced Lighting and Automation Control System capable of unified automation control of lighting loads.
3	Tubular skylights are installed in interior areas such as bathrooms, hallways, and kitchens that receive limited daylight.
4	Motion detector activators or photocells/ timers on all exterior lighting
5	Use of Daylighting Strategies

MECHANICAL HEATING & COOLING SYSTEMS

1	HVAC equipment properly sized using computer models
2	Zoning building's spaces based on the heating and/or cooling loads

3	Use of programmable thermostat for the adjustment of the operation timetable
4	Installation of radiand or hydronic floor systems
5	Use of Energy Star qualified equipment
6	Centrally locate the main heating unit (boiler or furnace)
7	Proper insulation and sealing to minimize heat and/or air leakage
8	Use of natural ventilation methods
9	Design for passive solar heat storage (Trombe wall)
10	Use of ventilation heat recover techinics

WATER HEATING

1	Set up the water heater thermostat at a lower temperature
2	Insulate all hot water lines
3	Insulate the water heater
4	Combined domestic hot water/space heating system
5	Drain wastewater heat recovery system installed

RENEWABLE ENERGY

1	Active solar thermal heating system installed
2	Solar electric system (photovoltaic panels) installed
3	Small Wind turbine installed or whole community wind driven electricity
4	Geothernal heat pumps for water and space heating needs when subsurface conditions allow

Health and Safety

INDOOR AIR QUALITY

1	Use low VOCs-emmiting materials (paints, finishings, adhesives, carpets, insulation, synthetic wood)
2	Design and install a whole building ventilation system (ASHRAE standard 62.2 – 2003)
3	Spot ventilation in kitchen & bathrooms (moisture/air contaminents control)
4	Install High Efficiency Particulate Air Filters (HEPA)
5	Install carbon monoxide (CO) and dioxide (CO2) monitoring system that provides feedback on space ventilation performance
6	Regular and proper maintenance of HVAC equipmnent, combustion equipment (stoves, boiler, furnance etc) and building spaces
7	Environmental Tobacco Smoke (ETS) Control
8	Install soil suction roadon reduction system (if required)
9	Garage detached from all living areas

THERMAL, VISUAL AND ACOUSTIC COMFORT

10	Achieve Thermal Comfort conditions (ASHRAE 55-2004, ISO 7730)
11	Achieve a minimum Daylight Factor of 2% in 75% of all regularly occupied areas
12	Use low noise equipment
13	Locate noisy mechanical equipment, office equipment, and functions away from noise-sensitive spaces
14	Sound isolation of walls and ceilings to prevent noise and vibrations transmision

Material Resource Efficiency

Reduse quantity of material and waste generation

1	Use pre-cut or pre-assembled building systems
2	Reusable foundation forms used to reduce waste (e.g. aluminium rather than site built wood forms)
3	Advanced framing techniques employed to reduce/conserve structural framing and lumber
4	Use of recycled fly ash concrete

Renewable materials

5 Use wood from renewable forestry (e.g. bamboo)

Locally acquired and produced materials

6 Localy harvested wood
7 Use of locally produced brick
8 Use of Indigenous stone

Recycled content materials

9 Use of recycled content construction materials (low-embodied energy)

Reuse materials

10 Reuse recoved materials from building deconstruction
11 Use of durable materials

Recycle materials during construction/demolition

12 Implementation of an on-site recover/recycle programm during construction or demolition
13 On-site separation of waste by type (metal, wood, plastic, glass etc) for off-site recycling
14 On-site recycling of construction waste (e.g. grinder)

Water Conservation

Reduse water quantity

1 Install low-flow bathroom, kitchen, shower faucets (aerating taps)
2 Install dual-flush toilets or non-water urinals (mostly for commercial buildings)
3 Use of shower instead of bathtub
4 Use of horizontal axis (frond loading) clothes washing machine
5 Use of high performance dish washer

Water management

6 Frequent plumping maintenance to minimize leakage
7 Monitoring water consumption to detect possible leak

Wastewater recycling/reuse

8 Install dual plumbing to separate grey water from black water
9 On-site grey water treatment installation
10 Use of recycled grey water for toilet flushing or irrigation

Rainwater harvest

11 Rainwater directed toward landscaping and natural pathways instead of sewer
12 Install a rainwater harvesting and storage system
13 Use rainwater for non-potable domestic use (toilet flushing, irrigation etc.)
14 Proper maintenace of storaged rainwater to prevent mosquito breeding
15 Proper roof material installation for rainwater harvesting