

Type: Urban setting

Category: Urban structure

Measures addressing the elements of the urban environment in their configuration



Description

Measures addressing the three dimensional composition of buildings or the elements of the urban environment in their configuration, e.g. the height and width of streets to influence the wind paths.

The measures comprise the protection and creation of cool air generating areas and of ventilation paths to reduce urban heat islands. To ensure the cooling down of heat islands, ventilation paths have to be ensured from areas generating cool air to areas which tend to heat up.

Spatial scale

Building level; City quarter/street; City; Region

Problems addressed

- Heat wave: less dense building structures (with “cool” surfaces) are less sensitive for heating up themselves; ventilation paths help areas vulnerable to heating up.

Combination with other types of measures

- Green open spaces
- Water retention; urban water spaces – standing, urban water spaces - flowing
- Urban texture

Combine ventilation paths with cool/fresh air generating areas (see green open spaces): enhances effects

Combine with measures related to the texture of urban surfaces

Implementation – functionality issues

The effectiveness of measures depend on:

- the spatial relation between the area vulnerable to heating up and
- the size and location of areas generating cool air; small areas producing cool air need to be connected adequately to show effects
- orientation of ventilation paths
- interrelationship have to be considered from local to regional level must be regarded

Further benefits

- Human comfort can be improved during heat waves; includes aspects of health and attractive surroundings for living and working
- Areas generating cool air can be developed for recreational use and thus can enhance the attractiveness of city quarters.

Economic issues

The costs vary according to size and complexity of a measure or a pool of measures and benefits need to be considered on the costs scale of the whole city or city quarter; consider in new development or re-development projects from the beginning.

Acceptance

Acceptance depends on the concrete circumstances of measures taken.

Possible obstacles

- Ventilation paths might have negative effects (on human comfort) during cooler seasons
- Conflicts may arise with the aims of a “compact city”

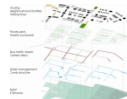
Find examples in Structural Fact Sheets



Ambition note
Wvi, leper, BE



Climate dike
Tiel, NL



Urban planning
Wvi, leper, BE



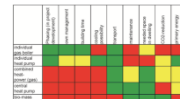
Cool Nature park
Tiel, NL



Water Vision
Nijmegen, NL



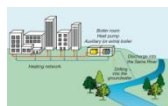
Location, orientation
Hastings, UK



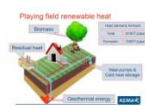
Sustainable energy system
Wvi, leper, BE



Low energy houses
Wvi, leper, BE



Renewable energy
Rouen, FR



Energy map and -strategy
Arnhem, NL