

Hibernating above ground

Typologies of hibernationsites of the common pipistrelle



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Sites of hibernation of the common pipistrelle: from the unknown to the best known

1987-	hibernation counts	1-2 sites/Year
2000-2008	testing surveying technics + looking for equals	6-10 sites/Year
2011-	mandatory autumnal surveys (not documented!)	40-80 sites/Year



Better led lights, heathcamera's, digital camera's

Dia 2

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Typologies of hibernationsites of the common pipistrelle:
semi natural

- Large cave (*entrances*)
 - > large mines (mass)
- Cliff (*faces*)
 - > basalt quarries (mass)

✓ *deep wall or ceiling cracks*
(stress-frost damages?)



Typologies of hibernationsites of the common pipistrelle:
medieval structures



Typologies of hibernationsites of the common pipistrelle:
medieval structures

- Churches (*interior*) *unheated/antifrost heated*
 - Castles (*interior/exterior*) *unheated/indirect heated*
 - Gate houses (*interior/exterior, indirect heated?*)
 - Estate houses basements (*interior*) (*partly heated*)
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- ✓ *beamhead slits*
 - ✓ *slits along wall beams*
 - ✓ *skirtings*
 - ✓ *pinholes*
 - ✓ *deep wall cracks (stress)*

Typologies of hibernationsites of the common pipistrelle:
(post) Napoleonic structures



Typologies of hibernationsites of the common pipistrelle:
(post) Napoleontic structures

- Large gunpowder storage towers (interior)
 - Poternes (soilcovered)
 - Kazernes (soilcovered) (interior-exterior)
 - Storage buildings (soil covered) (interior)
 - Gun towers (<1870) (with cellars or partly heated)
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- ✓ onset of window and doorframes (by poor maintenance)
 - ✓ slits along wall beams
 - ✓ open dilatations (by subsiding)

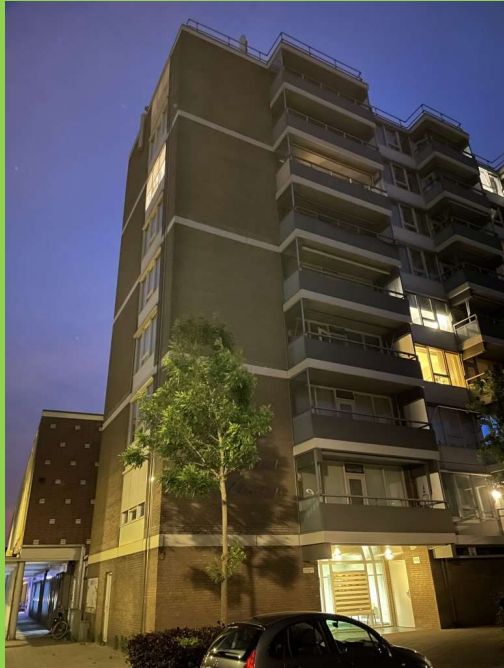
Typologies of hibernationsites of the common pipistrelle:
Second world war - cold war structures

- Ammunition bunker (large and soil covered)
- Storage buildings (frost security heated?)

- ✓ bore holes
- ✓ “wall hangings”
- ✓ added hiding places



Typologies of hibernationsites of the common pipistrelle:
'Modern' structures



Typologies of hibernationsites of the common pipistrelle: 'Modern' structures

- Early flats (1910-1940)
(with underground cavity wall)/moderate heated)
- Console flats: subtypes Porch & Gallery flats
(poorly insulated)/anti frostheated/indirect heated)
- Stone clad office/hospital buildings (<1980)
(with a cavity wall towards cellar)/heat leakage by poor insulation)
- ✓ cavity wall
- ✓ dilatations
- ✓ cladding
- ✓ drainpipes

Typologies of hibernationsites of the common pipistrelle: modern industrial building and infrastructure



Typologies of hibernationsites of the common pipistrelle: modern industrial building and infrastructure

- Parking garages (console type) (semi underground)
 - Railroad tunnels (natural stone soil connected)
 - Underpasses (tunneltype) (soil covered)
 - Motorway underpasses (sides soil connected)
 - Transformer / telecommunication buildings
(moderate heated)
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- ✓ dilatations
 - ✓ drainpipe holes
 - ✓ casting holes

Typologies of hibernationsites of the common pipistrelle:
old industrial buildings and large monuments



Typologies of hibernationsites of the common pipistrelle:
old industrial buildings and large monuments

- Constructionhalls or maintenance buildings
 - Waterstorage towers (watermass)
 - Brick kilns (mass and partly soil covered)
 - Lime kilns?
 - Large monuments undergrpund cavity walls)
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- ✓ dilatations
 - ✓ drainpipe holes
 - ✓ casting holes

Overall features:

A. Aboveground/semi aboveground

B. Large entrance

C. Frost security:

- | | |
|--|---------------------------------|
| i. Heat accumulated in walls | (>1,75m) |
| ii. Heat accumulated in soil | (direct soil connection) |
| iii. Airflow of 10-12 °C during winter | (indirect soil contact) |
| iv. Anti frost heating of an adjacent room/floor | (indirect ltd heating) |
| v. Indirect heating from nearby room | (indirect ltd heating distance) |
| > <i>Heat leaks by poor insulation?</i> | |

D. Deep crevices (or open dilatations)

Caused by type of construction, subsiding/stress, frost damage or poor maintenance

Typologies of hibernationsites of the common pipistrelle:
General features

The species is wide spread and being not at high risk although:

Hibernationsites of Ppip are under high risk by:

- 1) insensitive restauration works at medieval buildings
- 2) transformation/demolition of former military buildings/sites
- 3) speeded up renovation works of motorway bridges
- 4) mandatory insulation of all buildings

> No proven mitigation concepts for 2,3 and 4.

- *Thank you for your attention*