Case study building - Properties I

Registration code

Country: Austria


Standard: middle class housing

Diffusion of building type

Please note that the basic renovation unit (building or building part) that will be renovated should be described. The repetition of renovation units is acquired under "Building size".

Basic renovation unit

Detached
Attached
Integrated
Corner building

Building shape

Rectangular
Square
Structured
Irregular

Floor plan

Floor plan layout

Building structure

Frame construction
Panel construction
Partially massive constr.
Massive construction

Apartment access

Periferal staircase, double flight
Periferal staircase, single flight
Central staircase
Access gallery, internal stair
Access gallery, external stair(s)
Elevator

Roof

Flat roof
No attic / empty
Low slope roof
Attic space
Gable roof
Living space
Hipped roof
Roof terrace
Dormers
Canopy
concrete construction

Roof construction

Basement

No basement
Partial basement
Full basement
Basement partially underground
Basement partially or fully heated
Crawl space
# Case study building - Properties II

### Building size

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of blocks</td>
<td>1</td>
</tr>
<tr>
<td>Number of staircases per block</td>
<td>2</td>
</tr>
<tr>
<td>Number of floors</td>
<td>12</td>
</tr>
<tr>
<td>Typical room height</td>
<td>2.6 m</td>
</tr>
<tr>
<td>Length/width</td>
<td>L 28 m W 31 m</td>
</tr>
<tr>
<td>Façade/volume ratio</td>
<td>0.2</td>
</tr>
</tbody>
</table>

### Apartment size

<table>
<thead>
<tr>
<th>Apartments</th>
<th>Number</th>
<th>Rooms</th>
<th>Bath</th>
<th>m²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
<td>6.5</td>
<td>1</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>4.5</td>
<td>1</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>3.5</td>
<td>1</td>
<td>61</td>
</tr>
</tbody>
</table>

**Total (all blocks):**

| Total       | 27     | 15    | 3    | 261  |

### Façades

<table>
<thead>
<tr>
<th>Construction/Finish</th>
<th>South</th>
<th>West</th>
<th>North</th>
<th>East</th>
</tr>
</thead>
<tbody>
<tr>
<td>Façade construction</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Façade finish</td>
<td>W/(mK)</td>
<td>2.4 W</td>
<td>2.4 W</td>
<td>2.4 W</td>
</tr>
<tr>
<td>Sun-shading</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Windows

<table>
<thead>
<tr>
<th>Window Type</th>
<th>Front façade</th>
<th>Back façade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Floor slabs

<table>
<thead>
<tr>
<th>Slab Type</th>
<th>Top floor slab</th>
<th>Standard floor slabs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wowden beam slab</td>
<td></td>
<td>hollow brick slab</td>
</tr>
</tbody>
</table>

### Heating

- Central heating, radiator heating
- Central heating, floor heating
- Central air heating
- Individual appartment heating
- Individual room heating (electric)
- Individual room heating (oil / gas / wood / coal)

### Balconies

- None
- Regular
- Irregular
- Thermal bridge
- “Hanging”
- Supported

### Hot water

- Central hot water, single pipe system
- Central hot water, circulation pipe system
- Individual hot water tanks (electric)

### Ventilation

- None, natural ventilation only
- Exhaust air system, natural (stack ventilation)
- Exhaust air system, mechanical (bathrooms)
- Exhaust air system, mechanical (kitchen)
- Exhaust air, mechanical, bath and kitchen
- Mechanical ventilation (supply/exhaust air)

### Mechanical ventilation

- Central solar system

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Date: 28.06.2007
Name: Rene Hummer
Case study building - Urban context

Address: Steyrergasse 25 a, 8010 Graz
Rent: € 0
Orientation: No spec. orientation
View: Top view only
Front / Back: Green Garden view

Urban situation:
- Detached building in inhomogeneous neighbourhood
- Detached building in homogeneous neighbourhood
- Block development in homogeneous neighbourhood

View:
- Flat: Good view
- Slope: Acceptable

Neighbourhood:
- Public transportation: very good
- Shops, services, centre: medium
- Play grounds, sport: good
- Schools: very good

Environment:
- Quality of neighbourhood: acceptable
- Air pollution, emissions: moderate
- Outdoor noise level: noisy
### Case study buildings - Renovation needs / options

#### General information on retrofit situation

- Heat demand (via consumption) HWB=100 kWh/m²a

#### Façade options

- Compact insulation
- Blow in fibres
- Prefab module
- Ventilated insulation

#### Roof options and additions

- Roof panels
- Attic space module
- Flat roof panels
- Attic space module
- With canopy
- Without canopy
- Dormers
- Access to attic / roof level
- Roof terrasse

#### Living room extension

- Possible

#### Kitchen extension

- Possible

#### Bath room extension

- Possible

#### New, separate balconies

- Possible

#### New elevator (external)

- Possible

#### New elevator (internal)

- Possible

#### Actual state of building components

<table>
<thead>
<tr>
<th>Component</th>
<th>Actual State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls/ceilings</td>
<td>Used up</td>
</tr>
<tr>
<td>Floors</td>
<td>Used up</td>
</tr>
<tr>
<td>Windows</td>
<td>Used</td>
</tr>
<tr>
<td>Façade</td>
<td>Used up</td>
</tr>
<tr>
<td>Roof</td>
<td>Used up</td>
</tr>
</tbody>
</table>

#### Actual state of installations

<table>
<thead>
<tr>
<th>Component</th>
<th>Actual State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piping system</td>
<td>Used up</td>
</tr>
<tr>
<td>Electrical system</td>
<td>Well maintained</td>
</tr>
<tr>
<td>Ventilation</td>
<td>Used up</td>
</tr>
<tr>
<td>Kitchen</td>
<td>Used</td>
</tr>
<tr>
<td>Bathroom</td>
<td>Used</td>
</tr>
</tbody>
</table>

#### Additional Renovation measures

<table>
<thead>
<tr>
<th>Component</th>
<th>Renovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen</td>
<td>No renovation</td>
</tr>
<tr>
<td>Bathroom</td>
<td>No renovation</td>
</tr>
<tr>
<td>Staircase(s)</td>
<td>No renovation</td>
</tr>
<tr>
<td>Living and bedrooms</td>
<td>No renovation</td>
</tr>
<tr>
<td>Windows</td>
<td>No renovation</td>
</tr>
<tr>
<td>Floorings</td>
<td>New wood floors</td>
</tr>
</tbody>
</table>