

# **Wohnwert**

Architektenplanung und Wohnzufriedenheit an  
Beispielen aus Graz

# **The value of housing quality using examples of housing estates in Graz**

# **Content**

Method of the researching process

Examples of the analysed Housing areas in Graz from 1960-2000

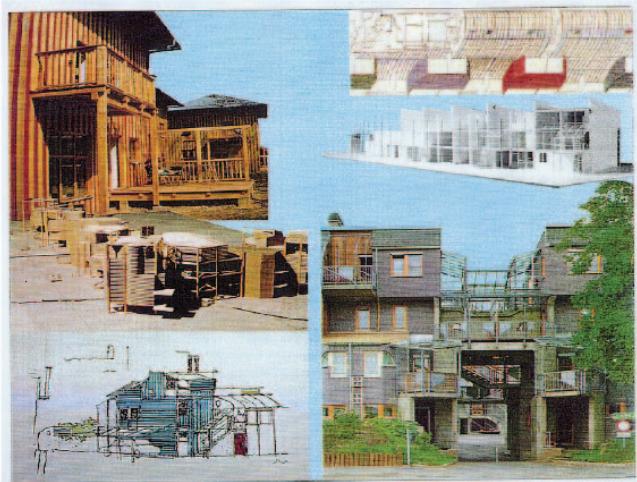
Results of the sociologic study and the researching work

# **Can architects build housing satisfaction?**

**Housing Satisfaction and architectural innovation  
of architecture in Styria since 1960  
Interviews with inhabitants of 18 Housing Areas in Graz**

A Sociologic Study by order of the Styrian Government made by  
Architect Werner Nußmüller and the Sociologists Markus Müller,  
Winfried Moser, Dieter Reicher Graz, März 2000

**Wohnzufriedenheit und architektonische Innovation  
in der Steiermark seit den 60er Jahren**



**Inhaltsverzeichnis**

**Zusammenfassung**

**A: Allgemeiner Teil**

**B: Die Siedlungen im Detail**

**C: Anhang**

Eine Studie im Auftrag der steiermärkischen Landesregierung, durchgeführt vom Wohnbund Steiermark  
Werner Nußmüller, Markus Müller, Winfried Moser, Dieter Reicher  
Graz, März 2000

# Residential satisfaction questionnaire

We currently conducting an investigation on living satisfaction in different housing estates in a study. This involves your personal satisfaction with the apartment, your living history and also to your personal views. The survey will take approximately 30 minutes. The information is treated confidentially and anonymously!

## 1. How long you've been in this apartment? : (Years)

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | >30 |
| O | O | O | O | O | O | O | O | O | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  | O  |    |     |

## 2. What was the reason moving into this apartment? (□open answer)

## 3. Did someone live in this House before you moved in?

Yes ([① continue with question 6](#))     No     Odon't know

## 4. Did you get the chance to modify the design of the apartment, before you moved into the apartment? (E.g. floor plan)

Yes ([① continue with question 6](#))     No     Odon't know

## 5. Have you used this possibility?

Yes: ([① continue with question 7](#))     No

## 6. Would you have liked to have had the opportunity to influence the floor plan?

Yes     No     Odon't know

## 7. How much longer are you planning to stay in this apartment?

less than one year

[① continue with question 8](#)

1-5 years

5-10 years

more

until I can afford something else

wants to stay in this apartment: ([① continue with question 9](#))

## 8. Should your (eventual) new apartment be larger or smaller than the current one?

greater     smaller     same size     Odon't know

## 9. Please tell me how satisfied you are with your flat.

1...very satisfied to 5...very unsatisfied; 6 do not know

|                              |       |  |
|------------------------------|-------|--|
| 1) location of the apartment | OOOOO |  |
| 2) size of apartment         | OOOOO |  |
| 3) storage space             | OOOOO |  |
| 4) brightness                | OOOOO |  |
| 5) order of rooms            | OOOOO |  |
| 6) number of rooms           | OOOOO |  |
| 7) room size                 | OOOOO |  |
| 8) housing costs             | OOOOO |  |
| 9) noise                     | OOOOO |  |
| 10) heating                  | OOOOO |  |
| 11) facilities               | OOOOO |  |
| 12) build quality            | OOOOO |  |
| 13) view                     | OOOOO |  |
| 14) property management      | OOOOO |  |

## 10. semantic differential - apartment: It's about associations, not whether the apartment is warm indeed, but "warm" and "cold" colours

Please indicate how good these descriptions fit to your apartment

|             | 1 | 2 | 3 | 4 | 5 |               |
|-------------|---|---|---|---|---|---------------|
| a) modern   | O | O | O | O | O | old fashioned |
| b) homely   | O | O | O | O | O | alien         |
| c) pleasant | O | O | O | O | O | unpleasant    |
| d) easy     | O | O | O | O | O | uncomfortable |
| e) friendly | O | O | O | O | O | sad           |
| f) light    | O | O | O | O | O | dark          |
| g) warm     | O | O | O | O | O | cold          |
| h) nice     | O | O | O | O | O | ugly          |
| i) widely   | O | O | O | O | O | narrow        |
| j) large    | O | O | O | O | O | small         |
| k) animated | O | O | O | O | O | lonely        |
| l) open     | O | O | O | O | O | closed        |

## 11. How intensively are you using your home for following?

1 = very much, 5 = not at all; 6=do not

Enter values

|   | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| a) professional work                                | O | O | O | O | O | O |
| b) Leisure, relax, hobbies                          | O | O | O | O | O | O |
| c) Cook / Eat                                       | O | O | O | O | O | O |
| d) time to spend with friends / family / neighbours | O | O | O | O | O | O |

## 12. Have you changed the use of individual rooms, since you moved in?

never     rarely     often

## 13. Do you use the space at in front of your doorstep and the Staircase for something other than just as access space (stop gossip, things, etc.)?

never     rarely     often

## 14. Do you try to prettify the room at your doorstep (pictures, plants, etc.)

Yes     No

## 15. Please tell me how satisfied you are with your housing estate and its surrounding.

1...very satisfied to 5...very unsatisfied; 6 do not know

|   |       |  |
|---|-------|--|
| 1) location in the city / in the place  | OOOOO |  |
| 2) connection to public transport   | OOOOO |  |
| 3) road links   | OOOOO |  |
| 4) parking in and around the estate   | OOOOO |  |
| 5) safety, especially for pedestrians   | OOOOO |  |
| 6) arrangement of houses in the estate  | OOOOO |  |
| 7) access staircase and your apartment  | OOOOO |  |
| 8) appearance   | OOOOO |  |
| 9) material   | OOOOO |  |
| 10) accessibility of school / kindergarten ( <input type="checkbox"/> if no relevance to leave blank) | OOOOO |  |
| 11) sports grounds and leisure facilities in the vicinity   | OOOOO |  |
| 12) supermarket   | OOOOO |  |
| 13) Baker / Convenient stores / providers   | OOOOO |  |
| 14) Nature/Green in the vicinity  | OOOOO |  |
| 15) parks within the estate   | OOOOO |  |
| 16) air quality   | OOOOO |  |

## **9. Please tell me how satisfied you are with your flat.**

1...very satisfied to 5...very unsatisfied; 6 do not know

|                              |           |  |
|------------------------------|-----------|--|
| 1) location of the apartment | ○ ○ ○ ○ ○ |  |
| 2) size of apartment         | ○ ○ ○ ○ ○ |  |
| 3) storage space             | ○ ○ ○ ○ ○ |  |
| 4) brightness                | ○ ○ ○ ○ ○ |  |
| 5) order of rooms            | ○ ○ ○ ○ ○ |  |
| 6) number of rooms           | ○ ○ ○ ○ ○ |  |
| 7) room size                 | ○ ○ ○ ○ ○ |  |
| 8) housing costs             | ○ ○ ○ ○ ○ |  |
| 9) noise                     | ○ ○ ○ ○ ○ |  |
| 10) heating                  | ○ ○ ○ ○ ○ |  |
| 11) facilities               | ○ ○ ○ ○ ○ |  |
| 12) build quality            | ○ ○ ○ ○ ○ |  |
| 13) view                     | ○ ○ ○ ○ ○ |  |
| 14) property management      | ○ ○ ○ ○ ○ |  |

**7. How much longer are you planning to stay in this apartment?**

- less than one year \_\_\_\_\_
- 1-5 years
- 5-10 years
- more
- until I can afford something else
- wants to stay in this apartment: (i)continue with question 9)

**8. Should your (eventual) new apartment be larger or smaller than the current one?**

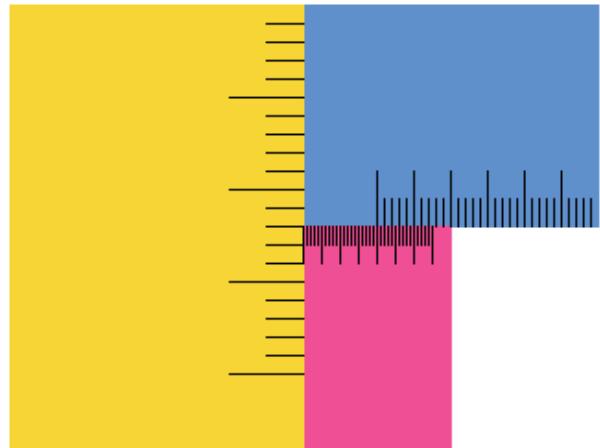
- greater
- smaller
- same size
- don't know

**What do experts say to housing examples, where the inhabitants are satisfied?**

**Band 89**  
**Schriftenreihe Wohnungswesen**

## **Wohnbauten planen, beurteilen und vergleichen**

**Wohnungs-Bewertungs-System WBS**  
**Ausgabe 2000**



## **Housing Areas Designing, Evaluating and Comparing Housing Evaluation System Issue 2000**

Architects Hanspeter Bürgi and Peter Raaflaub  
Sociologists, University Teachers, Scientists and Social workers  
federal office for housing Grenchen 2000

Wohnbauten planen, beurteilen und vergleichen  
Wohnungs-Bewertungs-System WBS, Ausgabe 2000

Schablonen Mst. 1 : 100

## **W1 Wohnung**

**W2 Wohnanlage**

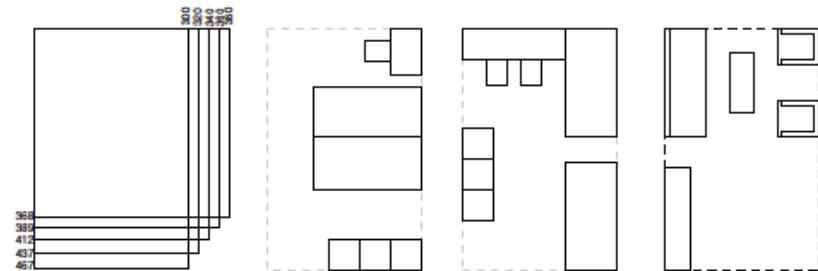
### **W3 Wohnstandort**

## Rahmenbedingungen und Grundausstattung: die Übersichtstabelle

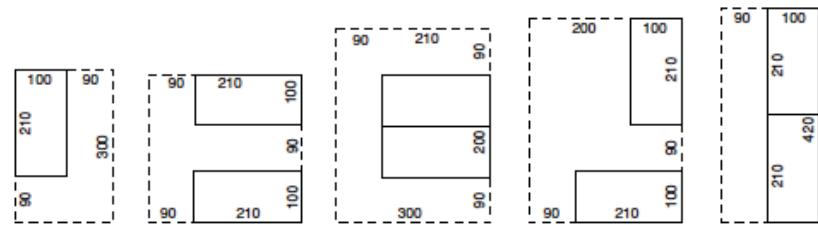
Die Rahmenbedingungen für Wohnbauten nach dem WBS sind: die eidgenössischen, kantonalen und kommunalen Planungs- und Bauvorschriften, die Normen der Fachverbände sowie die Norm SN 521500 für behinderten- und betagtgerechtes Bauen.

Weiter sind minimale Nettowohnflächen und eine Grundausstattung für die angemessene Personenbelegung einer Wohnung (Personenhaushalt PHH) zu beachten:

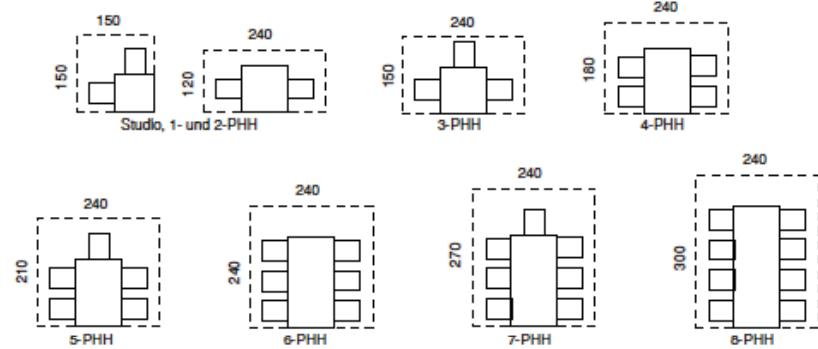
### B 3 Vielfältige Nutzbarkeit



## B 4 Möblierbarkeit von Aufenthaltsräumen

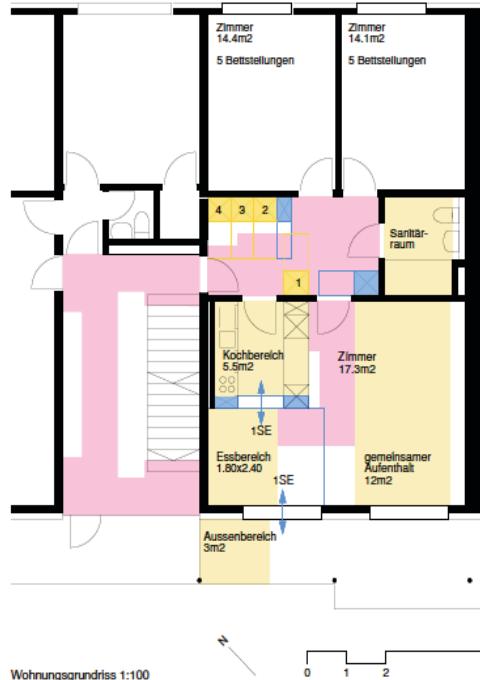


## B 7 Möblierbarkeit des Essbereichs



Wohnsiedlung: **Wohnsiedlung Siedlungsstrasse, Im Lerchenfeld, 3600 Thun**

Wohnung: B04, B14, B24 Anzahl Zimmer: 3 1/2 Fläche: 75.8m<sup>2</sup> PHH: 4



| Beurteilungskriterien             |   | Punkte      | Gewichte  | Gewichtete Punkte | Messwerte                                     |
|-----------------------------------|---|-------------|---|-------------------|---|
| W1                                | B 1 Nettwohnfläche                            | 2.0         | 3   | 6.0               | 75.8m <sup>2</sup>                            |
|                                   | B 2 Anzahl Zimmer                             | 1.5         | 3   | 4.5               | 2.5 Zimmer                                    |
|                                   | B 3 Vielfältige Nutzbarkeit                   | 3.0         | 3   | 9.0               | 3 Aufenthaltsräume                            |
|                                   | B 4 Möblierbarkeit von Aufenthaltsräumen      | 3.0         | 3   | 9.0               | 5 Bettstellungen<br>J. 1 Punkt für N-Richtung |
|                                   | B 5 Fenster der Aufenthaltsräume              | 1.5         | 2   | 3.0               | 2 Möglichkeiten                               |
|                                   | B 6 Platzierung des Essbereichs               | 3.0         | 2   | 6.0               | > 300x240 möglich                             |
|                                   | B 7 Möblierbarkeit des Essbereichs            | 3.0         | 2   | 6.0               |   |
|                                   | B 8 Verbindung zum Kochbereich                | 3.0         | 2   | 6.0               |   |
|                                   | B 9 Fenster im Kochbereich                    | 1.0         | 1   | 1.0               | Essbereich trennt, Distanz < 3.00             |
|                                   | B 10 Ausstattung im Sanitärbereich            | 1.0         | 1   | 1.0               | nur Grundausstattung vorh.                    |
|                                   | B 11 Fenster im Sanitärbereich                | 0.0         | 1   | 0.0               | fensterlos                                    |
|                                   | B 12 Stellmöglichkeiten                       | 2.5         | 4   | 10.0              | 2.5 zusätzl. Schrankmodule                    |
|                                   | B 13 Veränderbare Raumbeziehungen             | 0.0         | 2   | 0.0               | keine   |
|                                   | B 14 Veränderbare Raumauflteilung             | 0.0         | 2   | 0.0               | keine   |
|                                   | B 15 Wählbare Wege                            | 1.0         | 2   | 1.0               | 2 J., 1SE für Raum mit 2 Bereich.             |
|                                   | B 16 Privater Aussenbereich                   | 3.0         | 3   | 9.0               | 13.35m <sup>2</sup>                           |
| W1                                | Total   |             |   | 36                | 72.5  |
| <b>Gebrauchswert W1</b>           |   | <b>2.01</b> | <b>= <math>\Sigma</math> Gewichtete Punkte W1 / 36</b>            |                   |   |
| W2                                | B 17 Wohnungsangebot                          | 1.5         | 2   | 3.0               | 61% Anteil an 3- und 4-PHH                    |
|                                   | B 18 Zumietbare Wohn- und Arbeitsräume        | 3.0         | 3   | 9.0               | > 1.5m <sup>2</sup> / PHH                     |
|                                   | B 19 Veränderbare Wohnungsgrößen              | 3.0         | 2   | 6.0               | > 50% veränderbar                             |
|                                   | B 20 Wohnungszugänge                          | 2.0         | 2   | 4.0               | Durchschnitt ca. 0.7m <sup>2</sup> /PHH       |
|                                   | B 21 Hauseingangszone                         | 1.0         | 2   | 2.0               | Durchschnitt >0.2m <sup>2</sup> / PHH         |
|                                   | B 22 Wasch- und Trocknungsräume               | 3.0         | 3   | 9.0               | Durchschnitt >1.0m <sup>2</sup> / PHH         |
|                                   | B 23 Private Abstellräume                     | 3.0         | 2   | 6.0               | Durchschnitt >2.5m <sup>2</sup> / PHH         |
|                                   | B 24 Gemeinsame Abstellräume                  | 2.0         | 1   | 2.0               | 1.0m <sup>2</sup> / PHH                       |
|                                   | B 25 Mehrzweck- und Gemeinschaftsräume        | 3.0         | 1   | 3.0               | > 0.5m <sup>2</sup> / PHH                     |
|                                   | B 26 Gemeinsamer Aussenbereich                | 3.0         | 4   | 12.0              | > 12m <sup>2</sup> / PHHt                     |
|                                   | B 27 Fuss- und Velowegverschließung           | 2.5         | 2   | 5.0               | J. 1/2 Punkt für geringe Gefährd.             |
|                                   | B 28 Autoabstellplätze                        | 2.0         | 1   | 2.0               | < 80m, geringe Gefährdung                     |
|                                   | B 29 Abgestufte Öffentlichkeitsgrade          | 2.5         | 1   | 2.5               | Durchschnitt                                  |
|                                   | B 30 Lärmbelastung und Schallschutz           | 2.0         | 2   | 4.0               | geringe Beeinträchtigung                      |
| W2                                | Total   |             |   | 28                | 69.5  |
| <b>Gebrauchswert W2</b>           |   | <b>2.48</b> | <b>= <math>\Sigma</math> Gewichtete Punkte W2 / 28</b>            |                   |   |
| W3                                | B 31 Quartierspielplatz                       | 3.0         | 3   | 9.0               | 180m  |
|                                   | B 32 Parkanlage oder Wald                     | 3.0         | 2   | 6.0               | Wald angrenzend an Parzelle                   |
|                                   | B 33 Haltestelle des öffentlichen Verkehrs    | 3.0         | 8   | 24.0              | 220m  |
|                                   | B 34 Ortszentrum                              | 2.5         | 8   | 20.0              | 600m  |
|                                   | B 35 Kindergarten u. untere Stufe Volksschule | 2.5         | 3   | 7.5               | 600m  |
|                                   | B 36 Mittlere und obere Stufe Volksschule     | 0.0         | 1   | 0.0               | > 2000m                                       |
|                                   | B 37 Soziale Einrichtungen                    | 2.5         | 1   | 2.5               | 600m  |
|                                   | B 38 Naherholungsgebiet                       | 2.0         | 3   | 6.0               | 100m, 100m, >2000m                            |
|                                   | B 39 Regionalzentrum                          | 3.0         | 7   | 21.0              | < 12 Minuten                                  |
| W3                                | Total   |             |   | 36                | 96.0  |
| <b>Gebrauchswert W3</b>           |   | <b>2.67</b> | <b>= <math>\Sigma</math> Gewichtete Punkte W3 / 36</b>            |                   |   |
| <b>Gebrauchswert W1 + W2</b>      |   | <b>2.22</b> | <b>= <math>\Sigma</math> Gewichtete Punkte W1 + W2 / 64</b>       |                   |   |
| <b>Gebrauchswert W1 + W2 + W3</b> |   | <b>2.38</b> | <b>= <math>\Sigma</math> Gewichtete Punkte W1 + W2 + W3 / 100</b> |                   |   |

### Criteria for the flat

- Size of the flat
- Number of rooms
- Flexibility
- ability to furnish the rooms
- Direction of the windows
- Position of the eating place
- Connection to the cooking place
- Windows in the kitchen
- Facility of sanitary rooms
- Windows in the sanitary rooms
- Place for cabinet moduls
- Flexible connections between rooms
- Choosable ways
- Private space outside

### Criteria for the housing estate

- Different flats
- Rooms for work to rent
- Flexible size of flats
- Size of place before flat
- Size of place before the house
- Laundry
- Storage space
- Common rooms
- Common space outside
- Access for the pedestrians and the bicycle
- Place for the cars
- Noise

### Criteria for the location

- Playground for children
- Park or forest
- Public traffic
- Centure of the quarter
- Kindergarten and ground school
- Upper school
- Social infrastructure
- Refreshing area
- Centure of the region

Utility value for the location

### Utility value for the flat + the housing estate

Utility value for the flat + the housing estate + the location

## **Sociologic Study – Interviews**

“Housing Satisfaction and innovation of architecture  
in Styria since 1960“

Interviews with inhabitants of 16 housing areas in Graz

## **Housing Evaluation System**

Swiss WBS 2000

List of criterias defined by experts



## **Subjectiv value judgement of the inhabitants**

Marks von 1-5

1: very satisfied

5: very unsatisfied



## **Intersubjective value judgement**

Value 0-3

0: target not met

3: target met



## **Comparison of the Results**



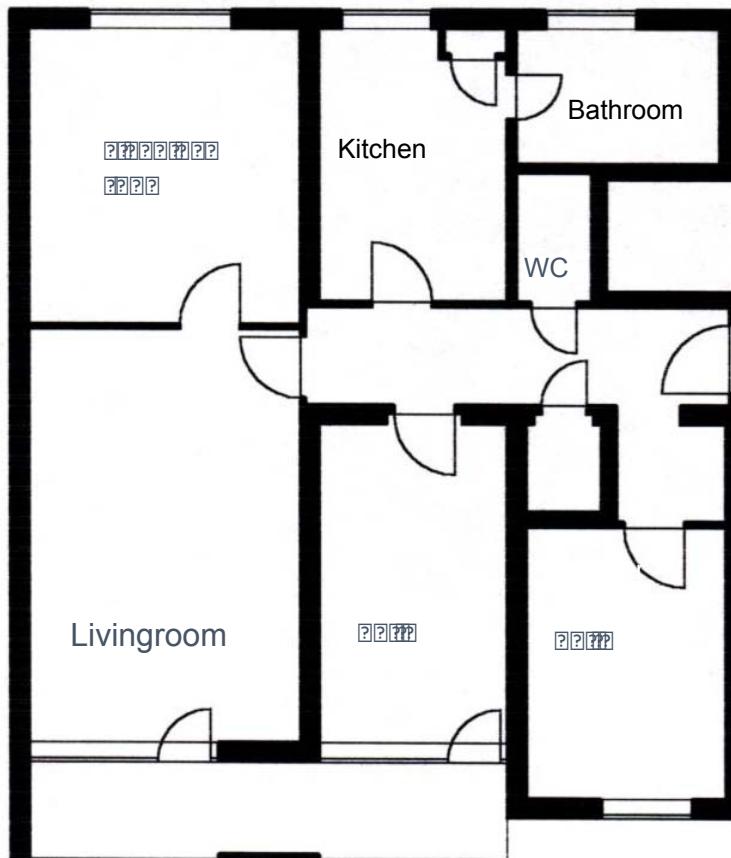
High-Rise Buildings and Sprawl in the 60-ies and 70-ies in Graz



Eisteichsiedlung 1958 – 1964, Terrassenhaussiedlung 1972-1978, Wienerbergersiedlung 1981



Eisteichsiedlung Dr. Robert-Grafstr. 19-21, ÖWGes. 1964



Eisteichsiedlung Dr. Robert-Grafstr.19-21, ÖWGes. 1964

Housing Satisfaction:  
Evaluation system:

12. of 16  
14. of 16



Grazer Schule - School of Graz 1966 - ?



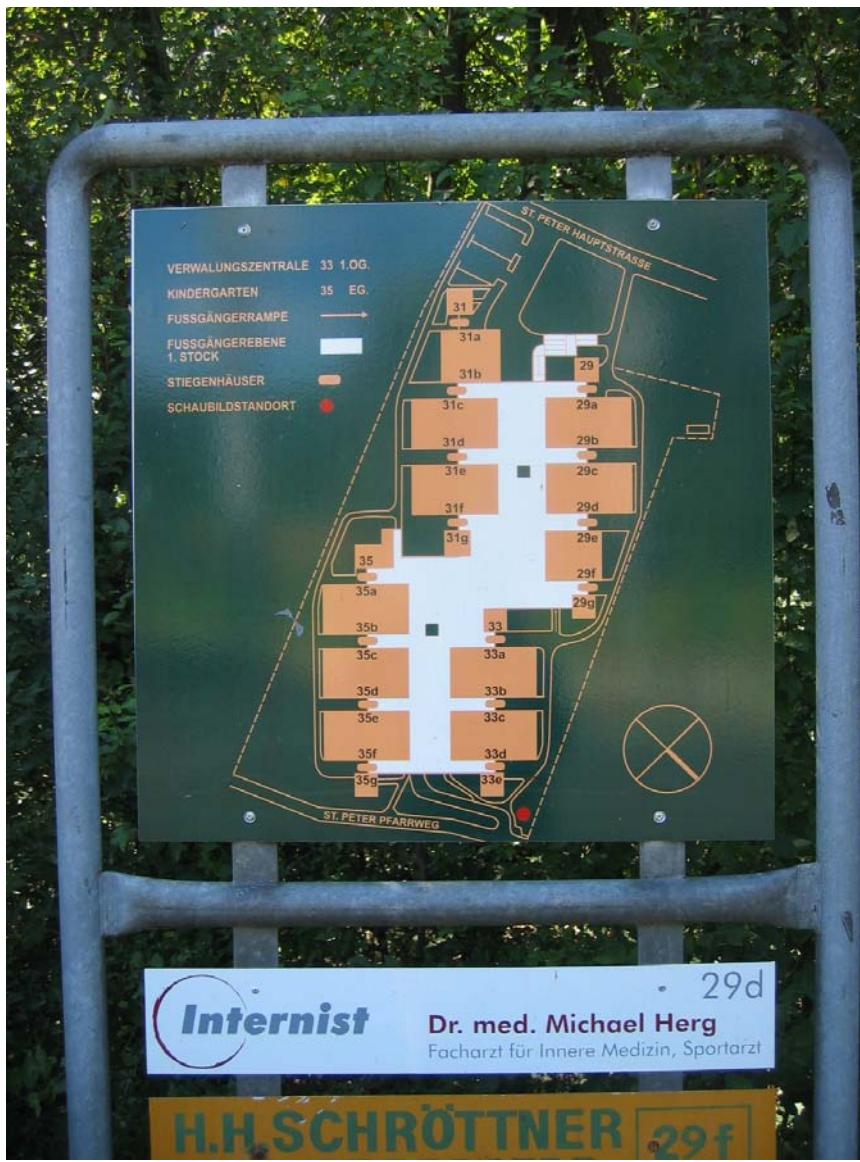
Terrassenhaussiedlung 1966

## Requirements of the architects of the Terrassenhaussiedlung 1966

- **New Housing forms** within new urban concepts with new laws
- **Mix of functions:** housing and working, recreation and education
- **Integration of private and public** for common contacts
- **Higher Density of development** for new urban housing
- **Family Housing** with the one family house as inspiration
- **New technical preproduction methods** by research
- **Creative Activation of the inhabitants** for personal fulfillment
- **Highest artistically quality for the most responsible task: housing**



Terrassenhaussiedlung 1978





















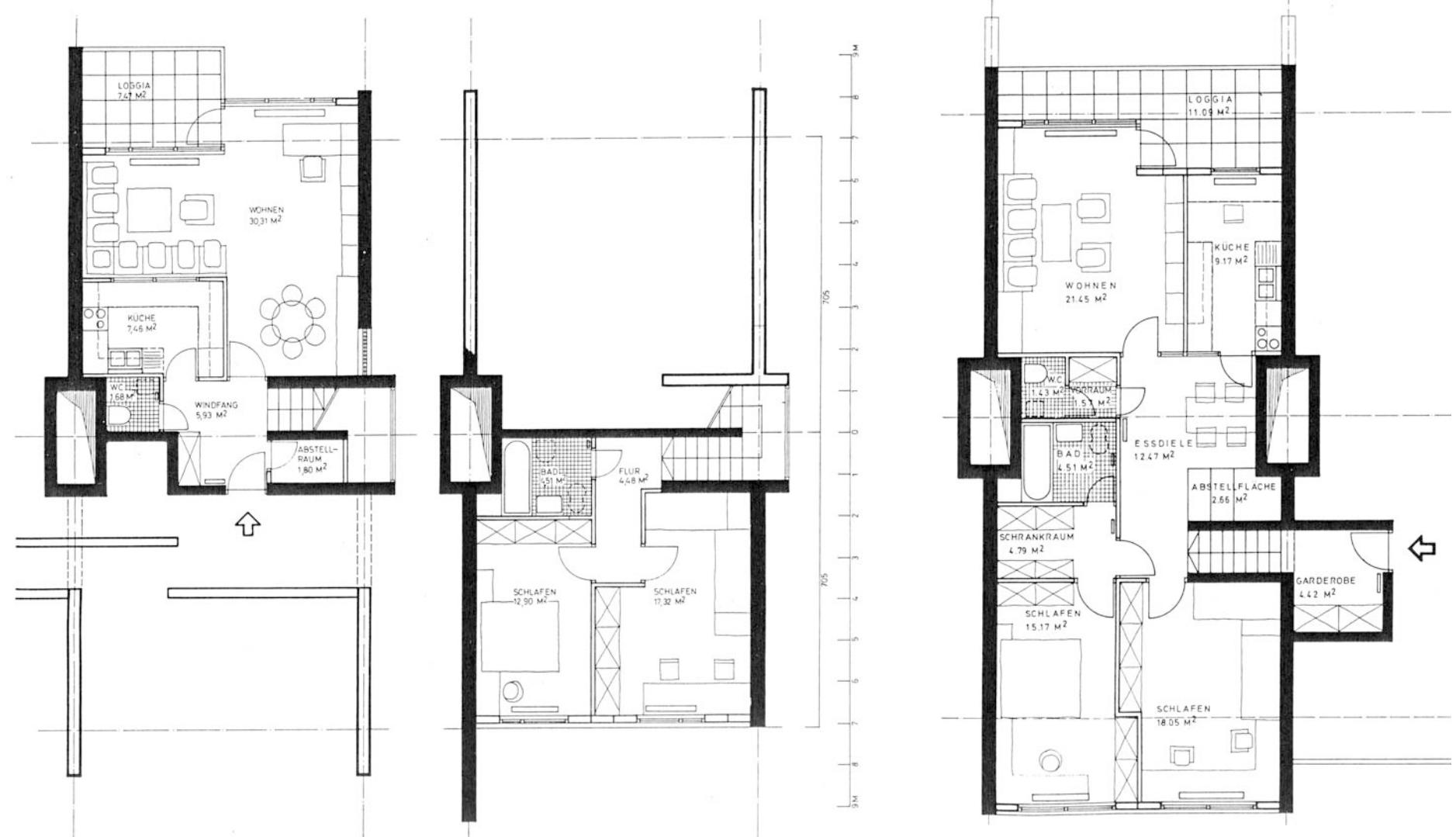


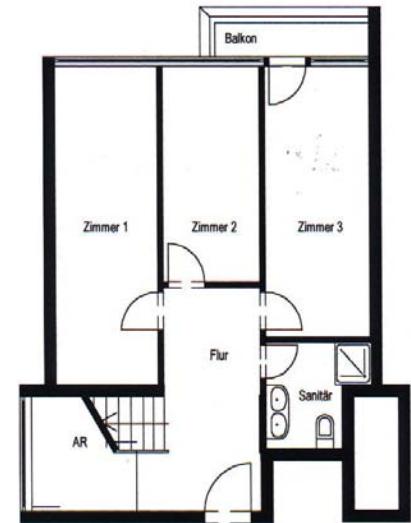
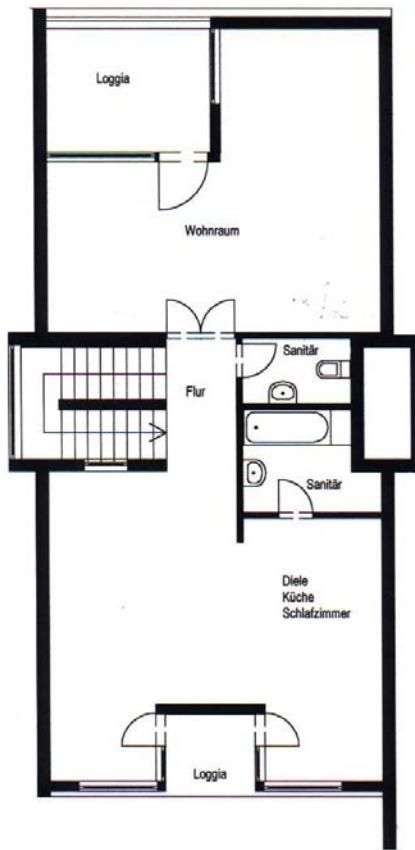
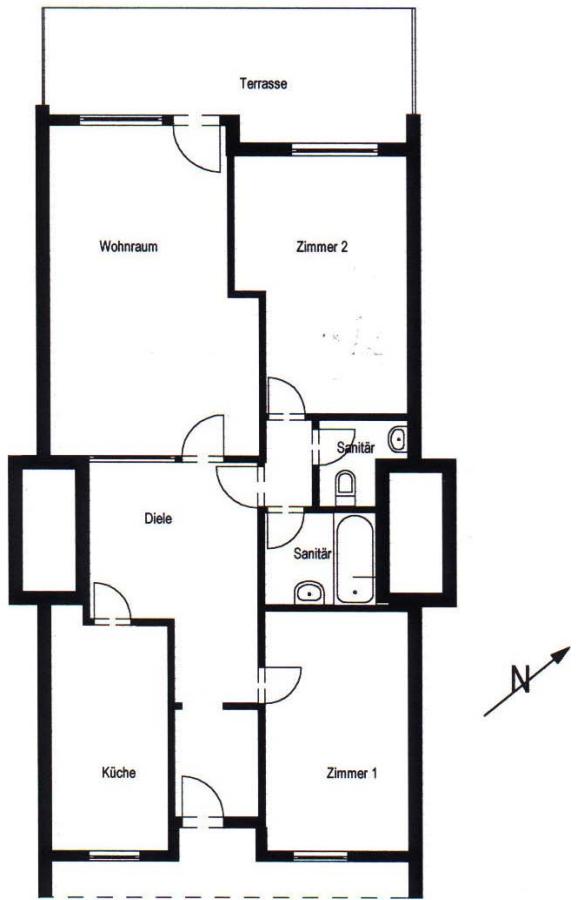


Terrassenhaussiedlung Zentrum



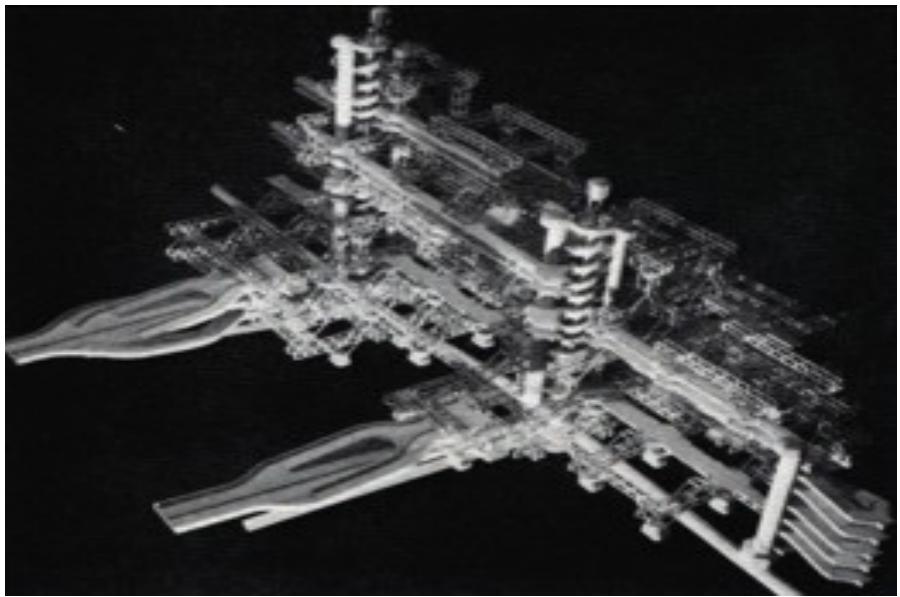
Kindergarten







Terrassenhaussiedlung Moduls of the Facade



The Vision : Neue Wohnform Ragnitz 1965

Günther Domenig, Eilfried Huth



The Reality: Berlinerring Ragnitz



Eschensiedlung Eilfried Huth 1972 - 1982



## Modell Steiermark The Styrian Model

**Not the housing authorities should determine where and how housing buildings were made, but the people, who find together and live together.**

**The best architects should work with them, competitions shall choose the best, each building should be individuell, no copies from the drawer.**

**Housing is more than a roof over the head, is the feeling of security and home.**

## Requirements

### Architects of the Terrassenhaussiedlung 1966

- New Housing forms
- Mix of functions
- Integration of private and public
- Higher Density of development
- Family Housing
- New technical preproduction methods
- Creative Activation of the inhabitants
- Highest artistically quality for the most responsible task: housing

### Working Team 12 Styrian Model 1972

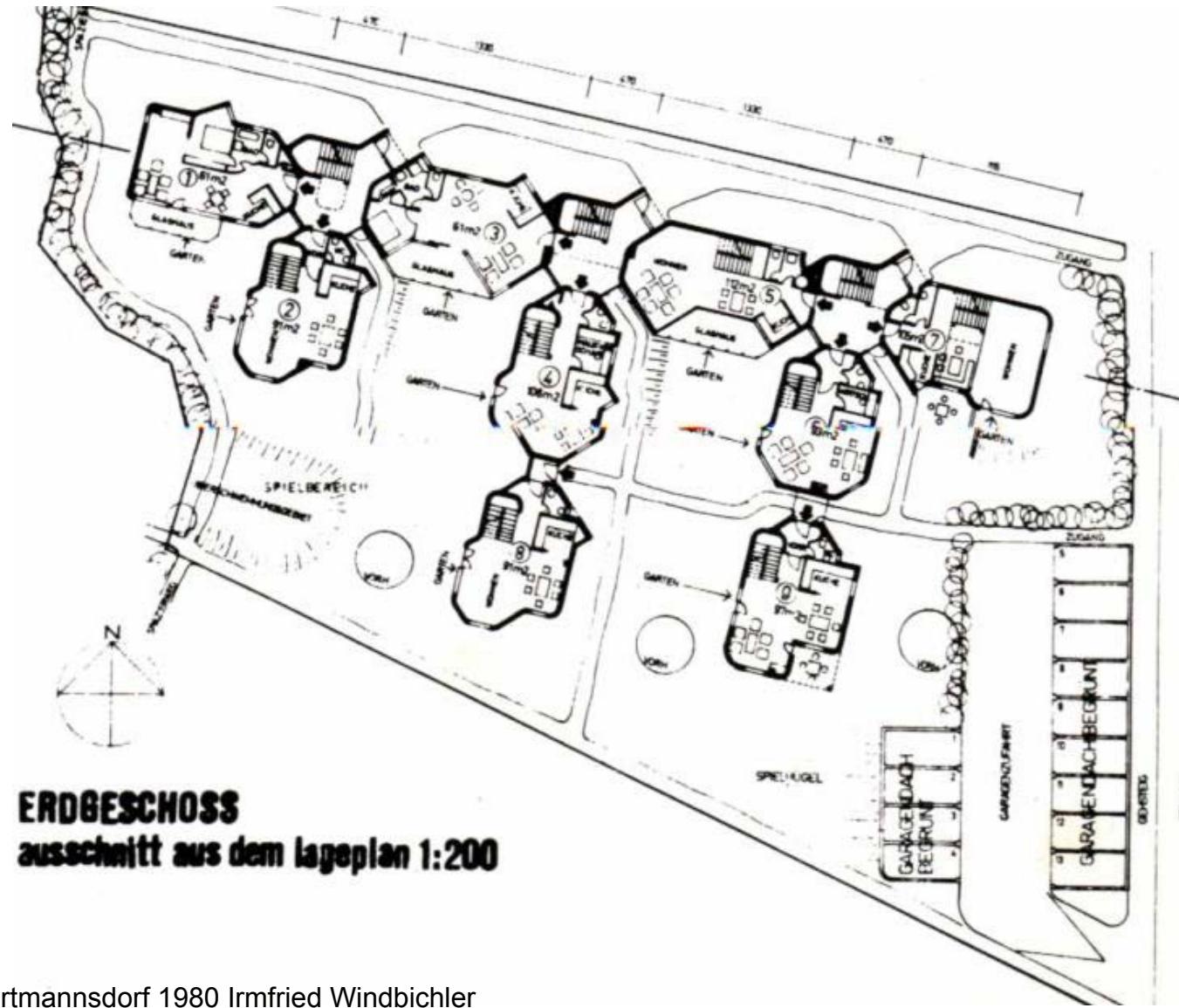
- Variety and Plurality
- Development Plans
- Common Rooms and Infrastructure
- Greater Units
- Variability of groundplans
- Housing Research
- Participation
- Groups as Interested Parties
- Housing Competitions
- Catalogue for qualities
- Social Integration
- Mix of young and old
- New Law for Housing Subvention



1. Development Plan of Graz 1982

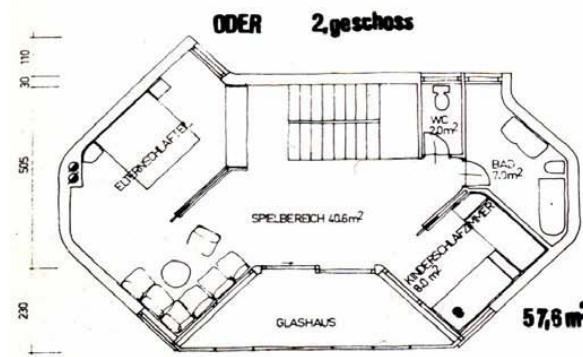
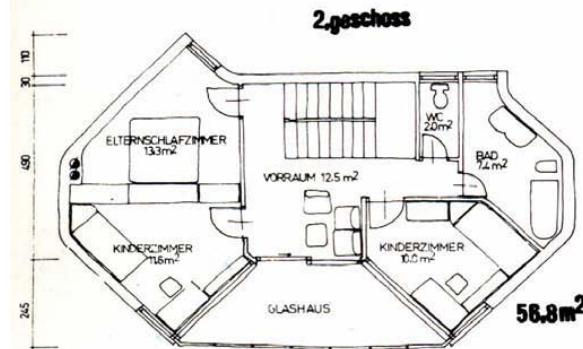
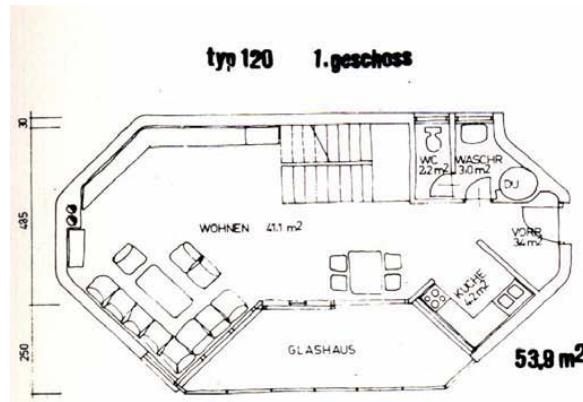


**1. Competition of the styrian model 1980:** Markt Hartmannsdorf Architect Windbichler 1. Price



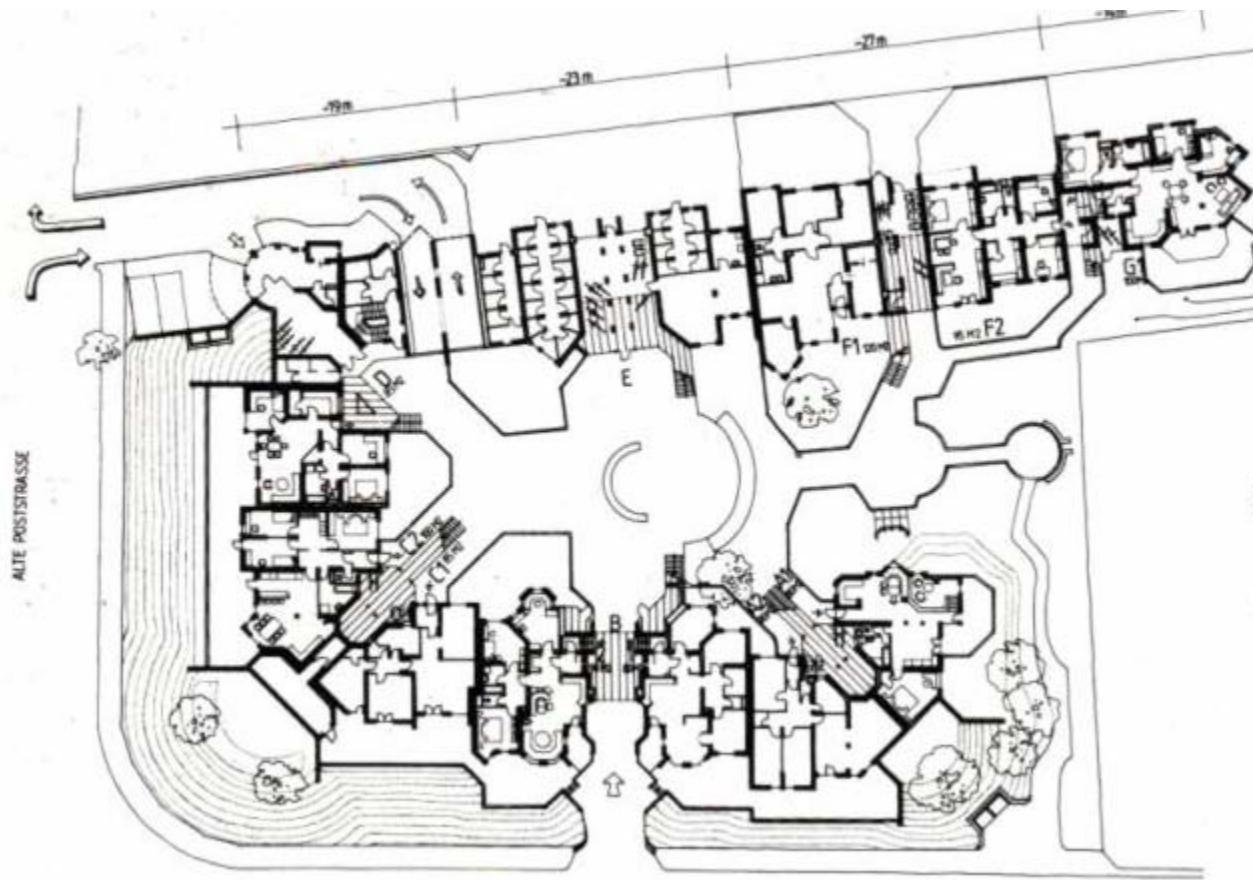
Markt Hartmannsdorf 1980 Irmfried Windbichler

Markt Hartmannsdorf 1980 Irmfried Windbichler

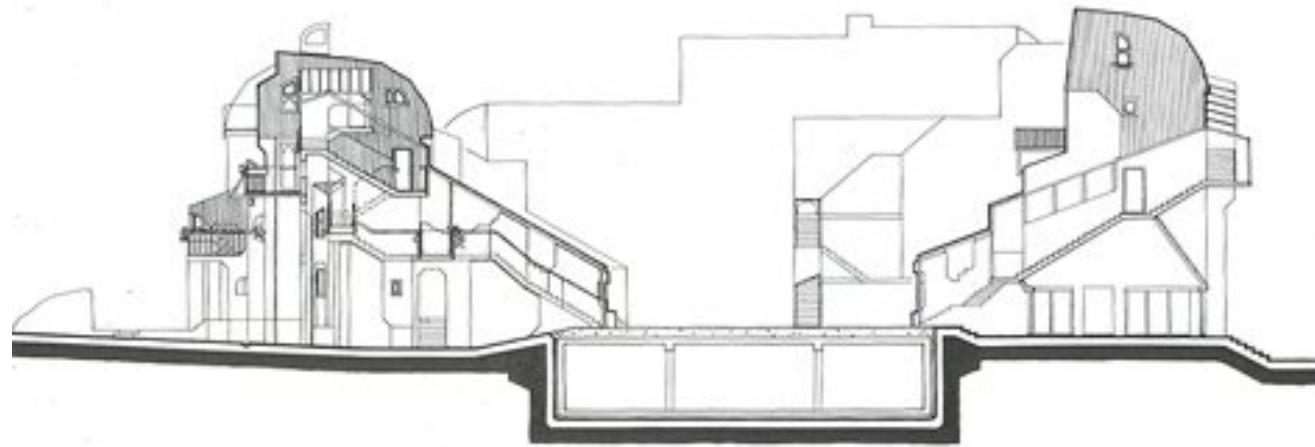




Alte Poststrasse Szyszkowitz / Kowalsky 1981



Alte Poststrasse Szyszkowitz / Kowalsky 1981



Alte Poststrasse Szyszkowitz / Kowalsky 1981



Alte Poststrasse Szyszkowitz / Kowalsky 1981



Alte Poststrasse Szyszkowitz / Kowalsky 1981



Alte Poststrasse Szyszkowitz / Kowalsky 1981



Wienerbergersiedlung 1. Competition of the Styrian Model in Graz1981 1. Price Erskine/Riess



Wienerbergersiedlung Ralph Erskine build „Johnny“ as recently as 1985 because of the Clay Ground



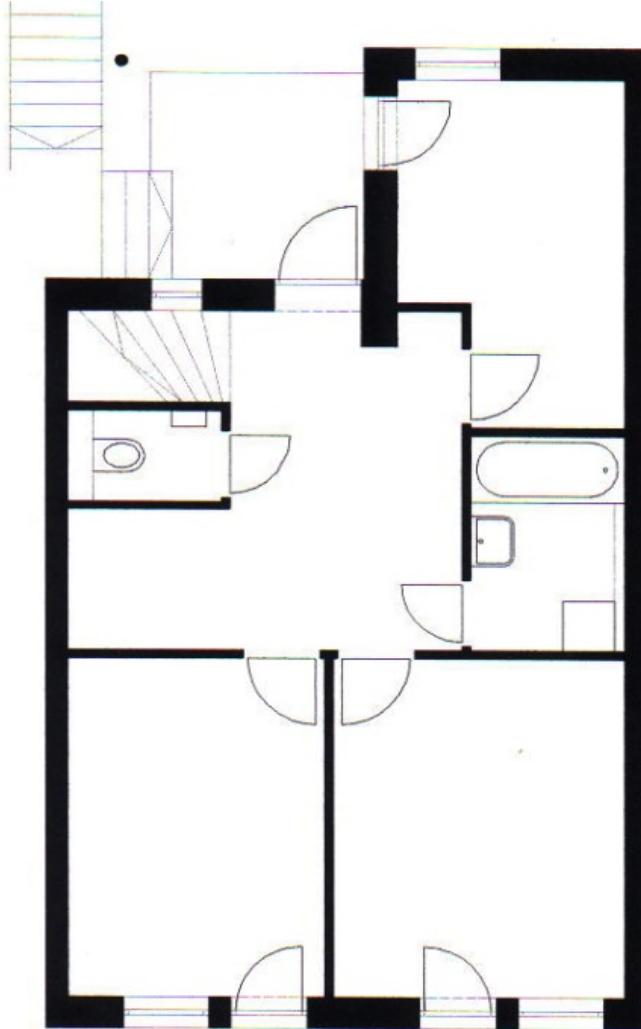
Wienerbergersiedlung Erskine and Riess 1985: Laundry-Houses for Meeting Points



Wienerbergersiedlung Erskine and Riess 1985

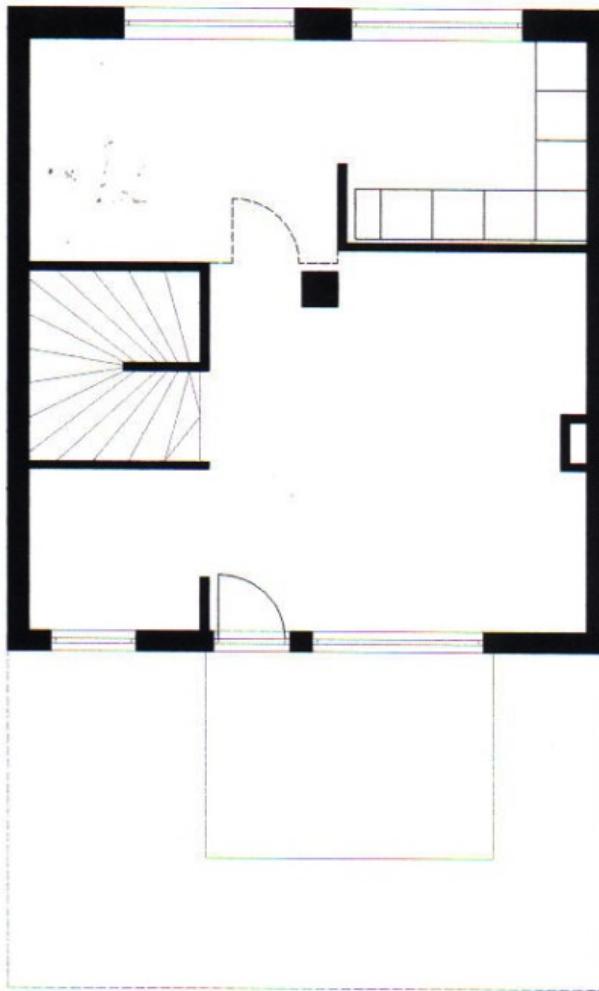


Wienerbergersiedlung Bakery Cafe and a small Lake



## Maisonette 90 m<sup>2</sup> 3 Personen

Wienerbergersiedlung Erskine and Riess 1985

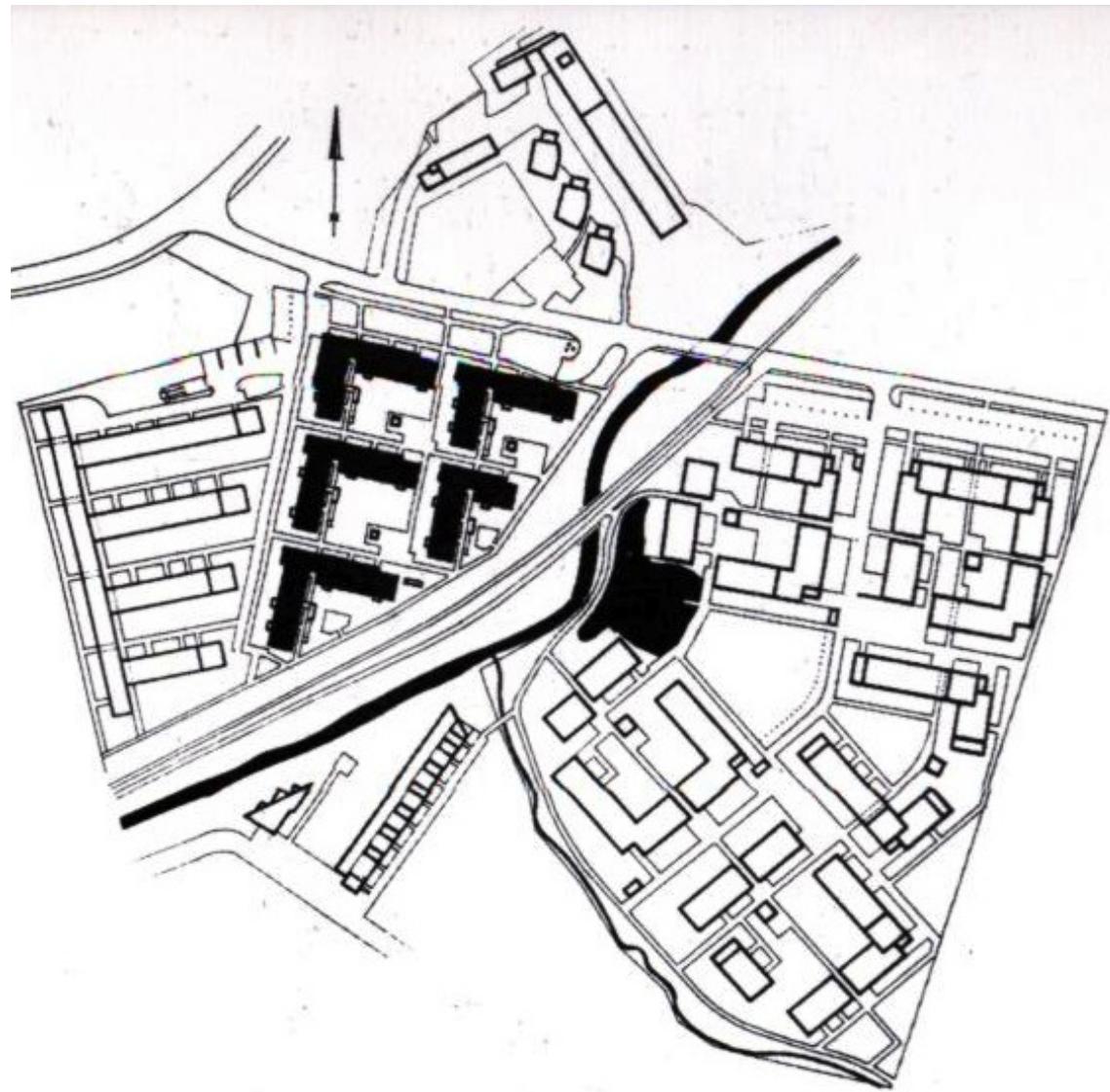


Housing Satisfaction:  
Evaluation system:

7. of 16  
5. of 16



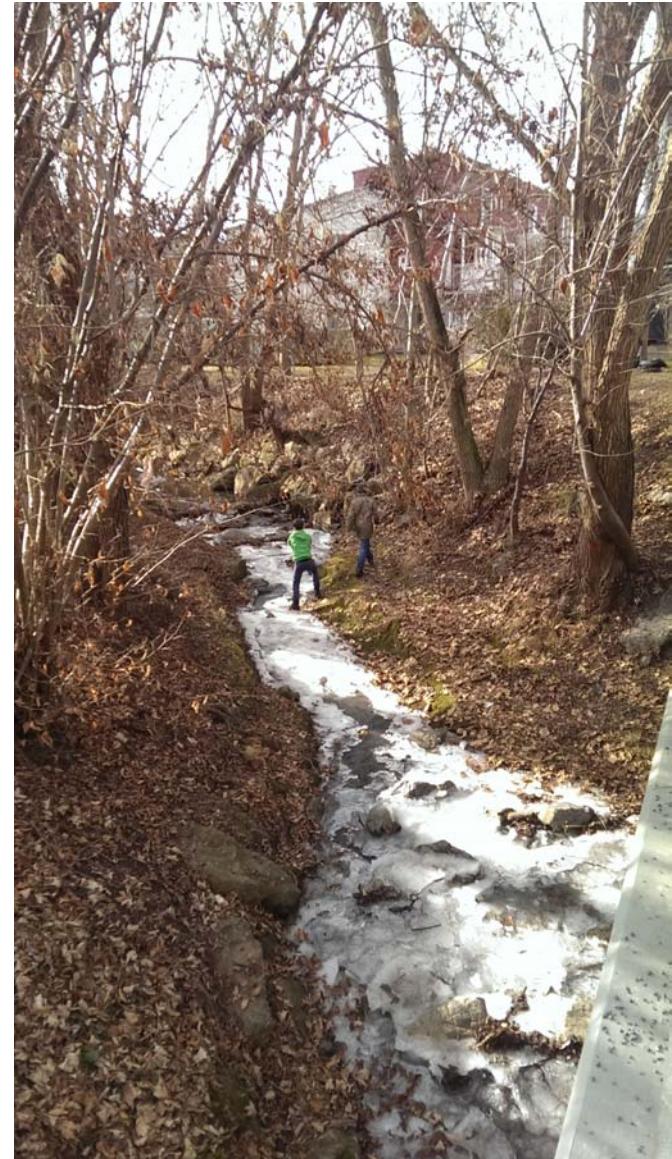
Tannhofgründe 1987-1994



Tannhofgründe Competition 1983



Tannhof I 1987 - 1988



Tannhof I 1987-1988



Tannhof II 1989-1990



Tannhof II 1989-1990



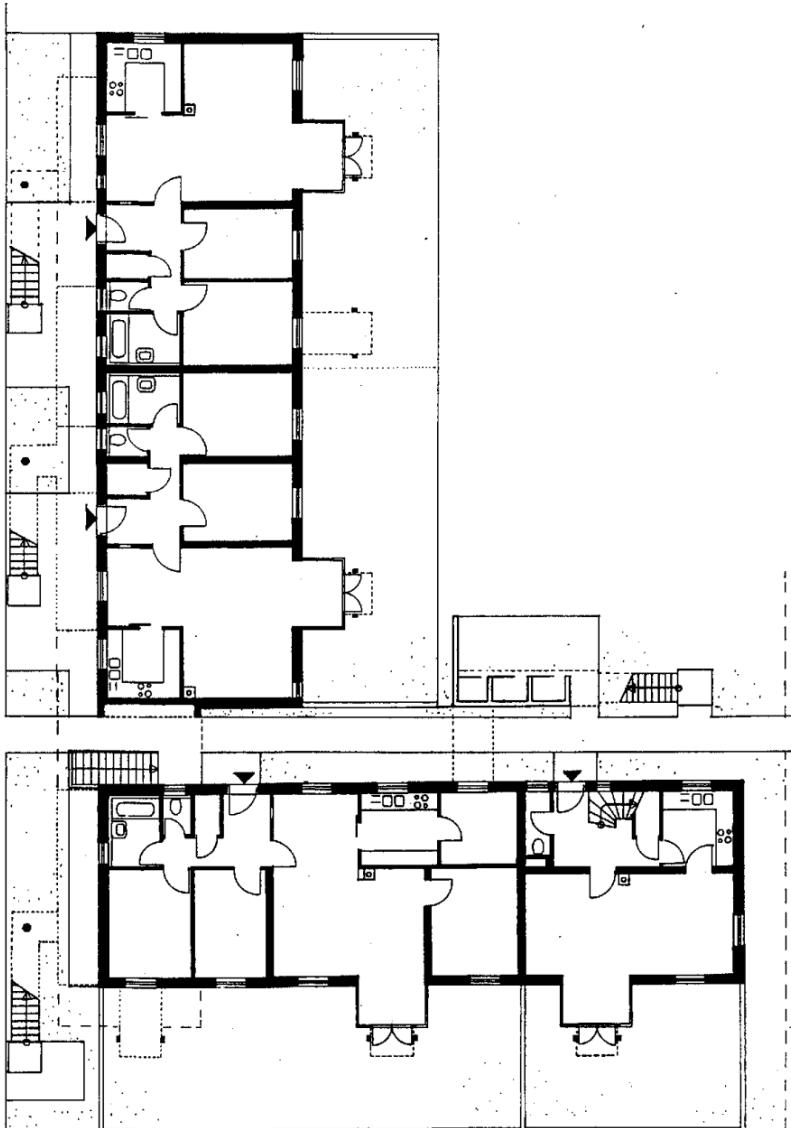
Tannhof II Passages



Gardens



Tannhof II Playgrounds and Common Spaces for Meeting Points



Tannhof II Groundfloor Plans

Housing Satisfaction:  
Evaluation system:

4. of 16  
2. of 16



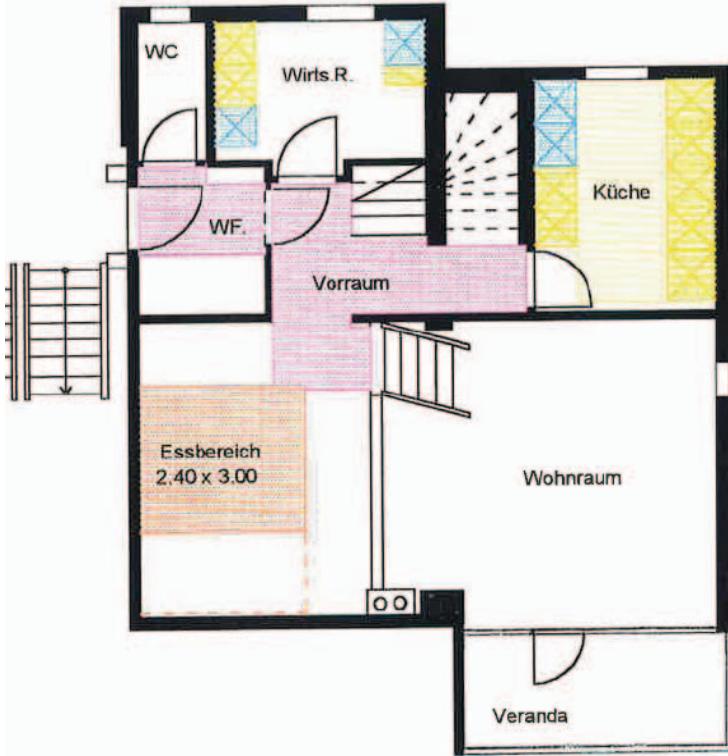
Rettenbachersiedlung Bernhard Hafner 1986-1989



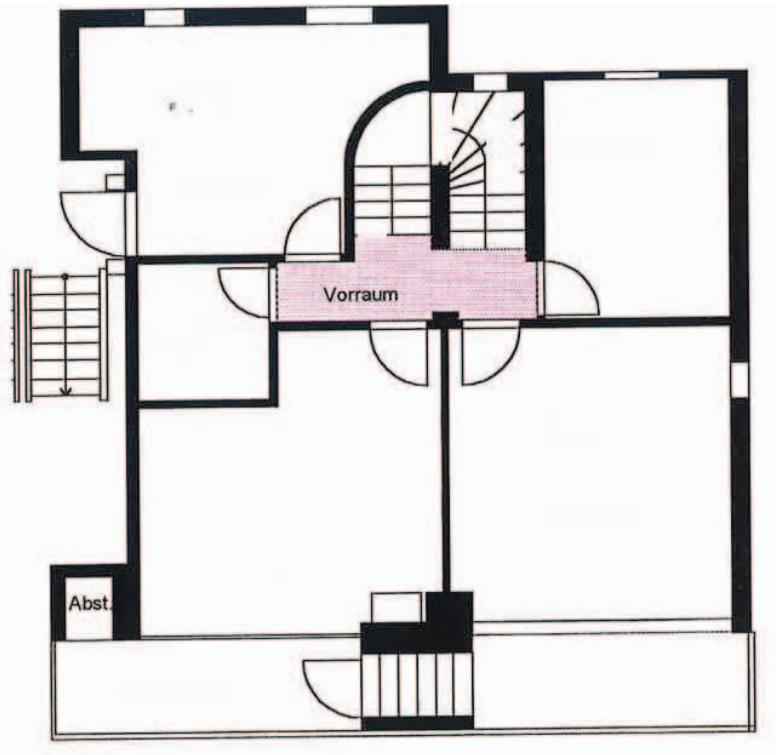
Rettenbachersiedlung Bernhard Hafner 1989 und Kernhaussiedlung Gruppe 3 1984



Rettenbachersiedlung 1989



Rettenbachersiedlung 1989 Floor Plans with Evaluation System



Housing Satisfaction:  
Evaluation system:

1. of 16  
3. of 16



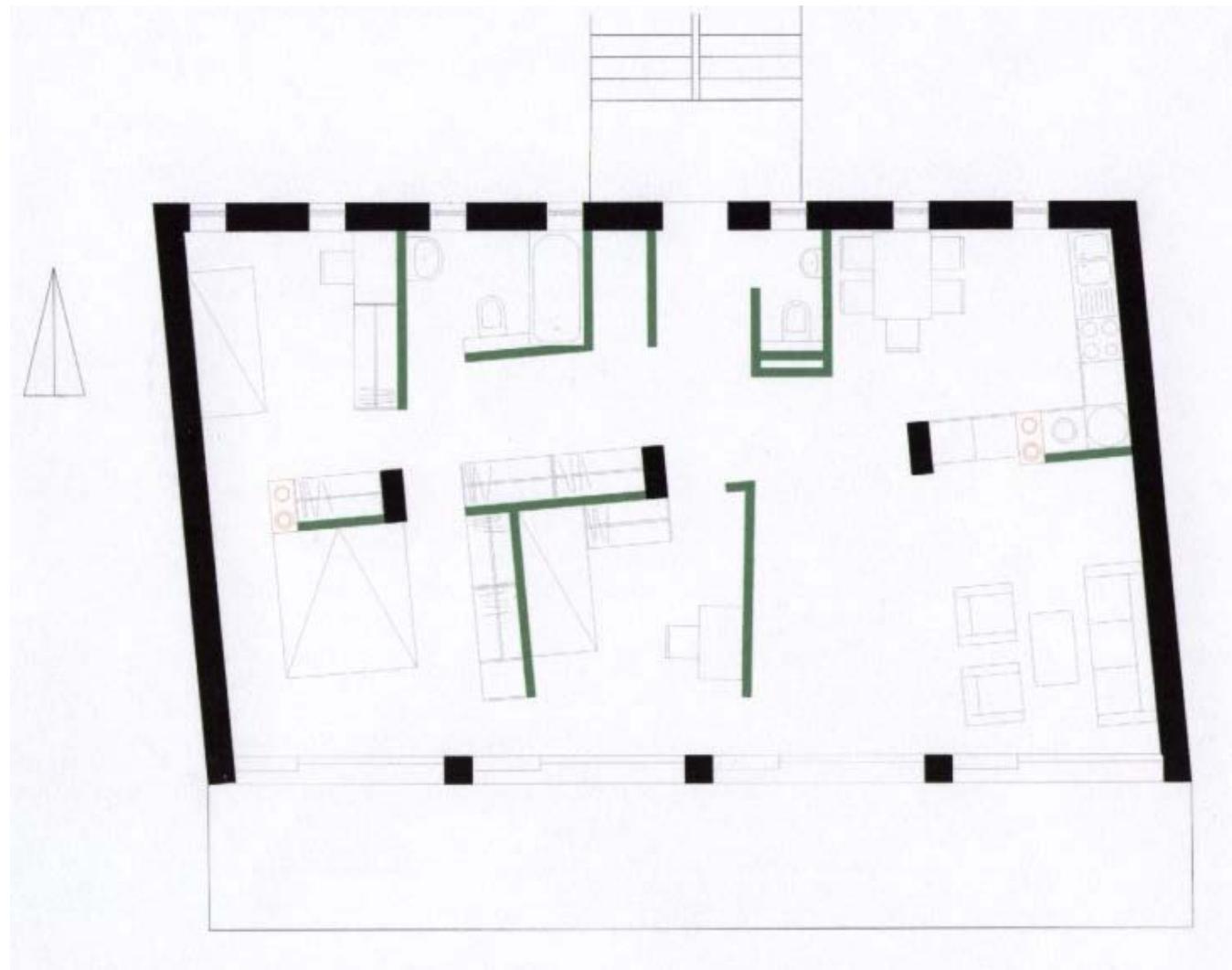
Heidenreichstrasse Wolff-Plottegg 1987



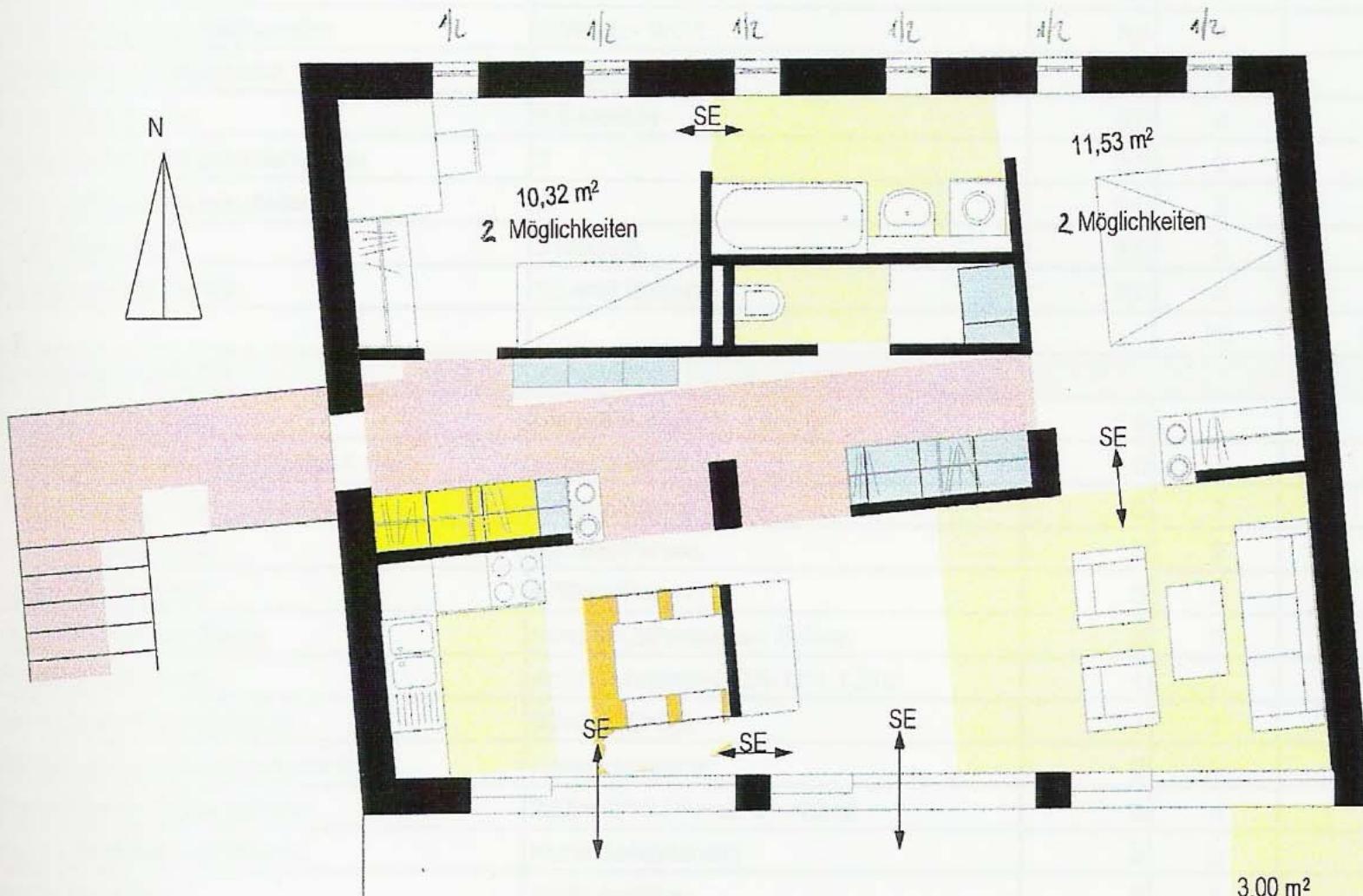
Heidenreichstrasse Wolff-Plottegg 1987



Heidenreichstrasse Wolff-Plotegg 1987



Heidenreichstrasse Wolff-Plotegg 1987



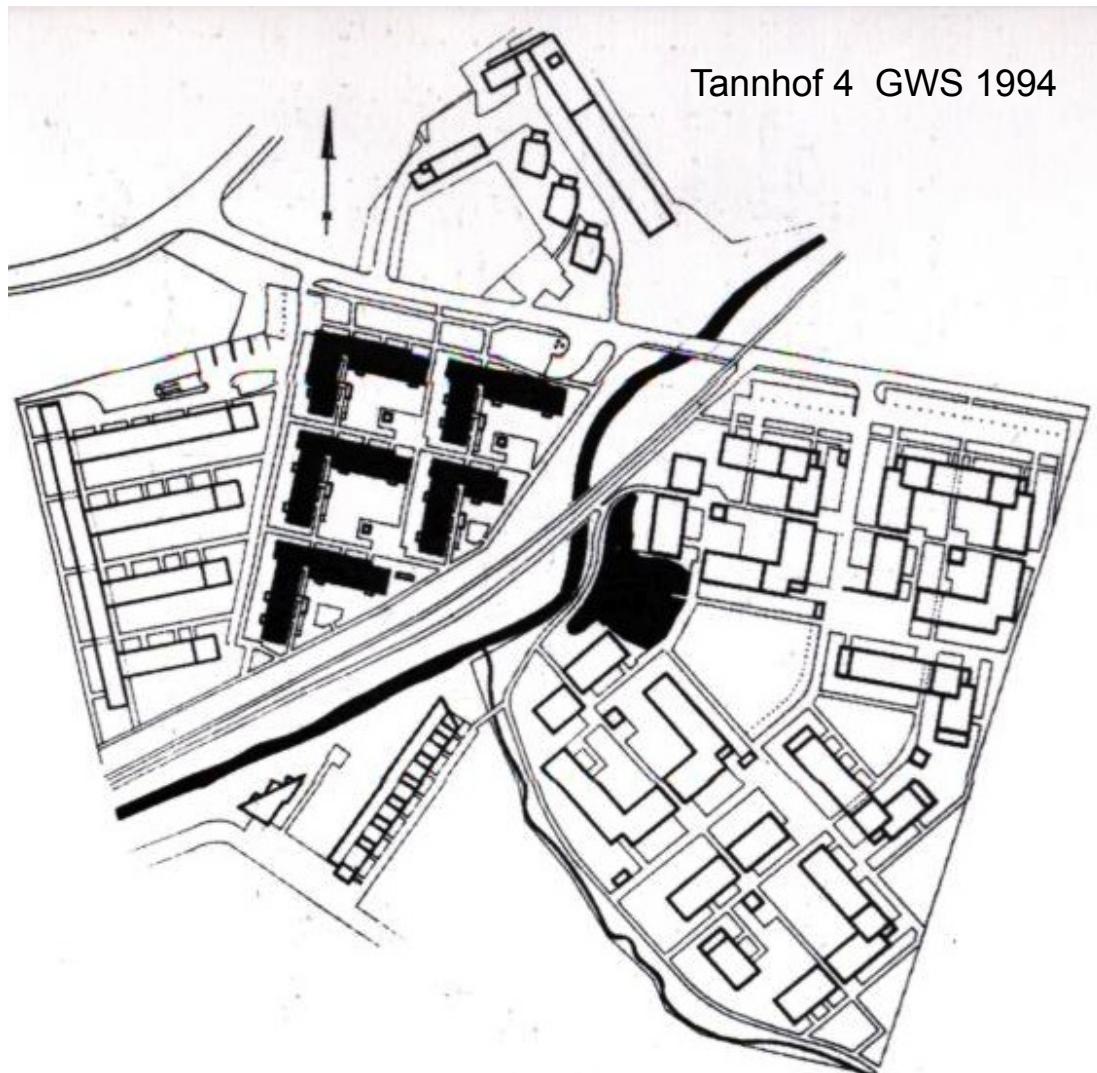
Heidenreichstrasse Groundfloor Plan with Evaluation System

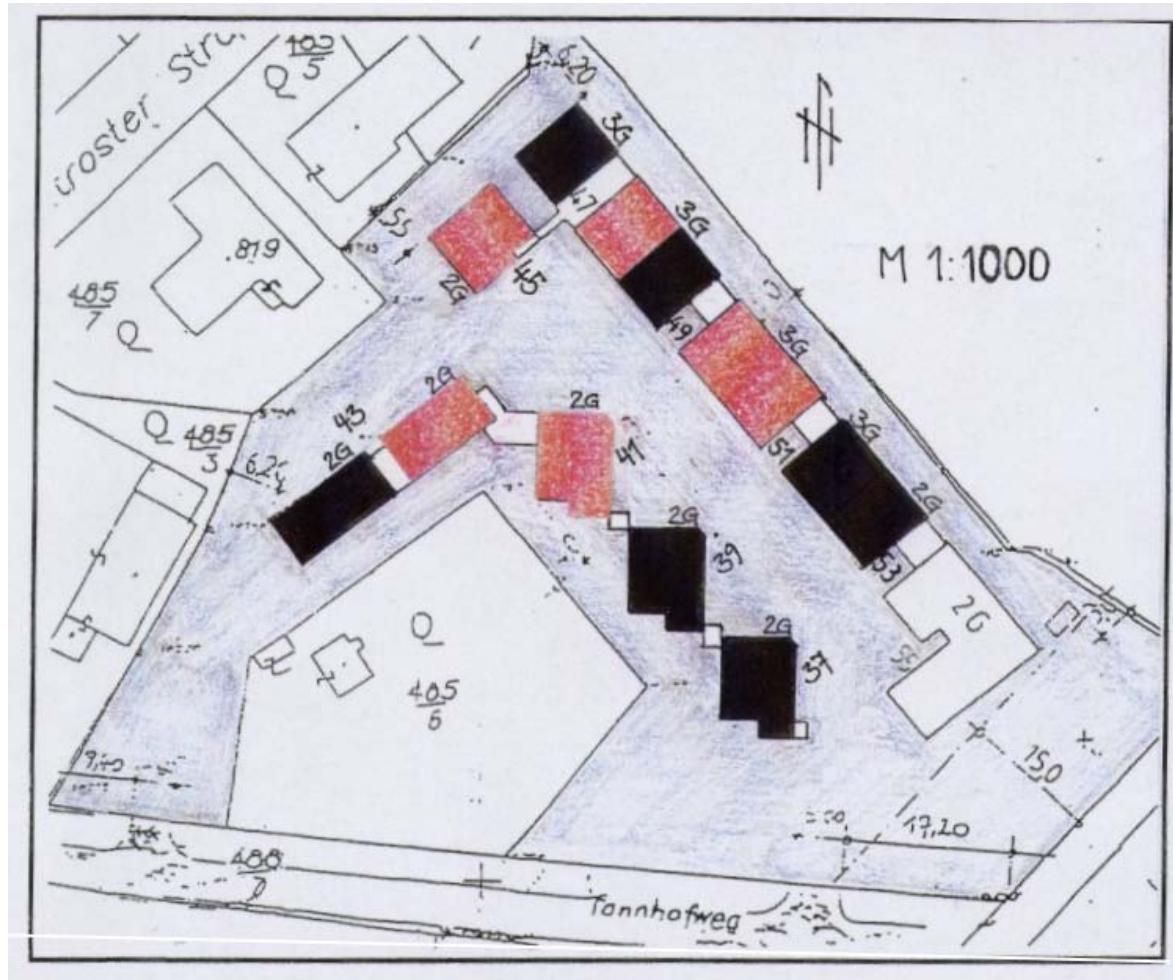
Housing Satisfaction: 3. of 16  
Evaluation system: 1. of 16

The economic recession in the 90-ies, the unemployment and the population decrease are influencing the housing activities in a negativ way. In 1991 the political party in styria was changing and so everything changed in the housing field. The experiment Social Housing coud not be continued.

Instead of public competitions, architects were invited to build conservative architecture in the following years.



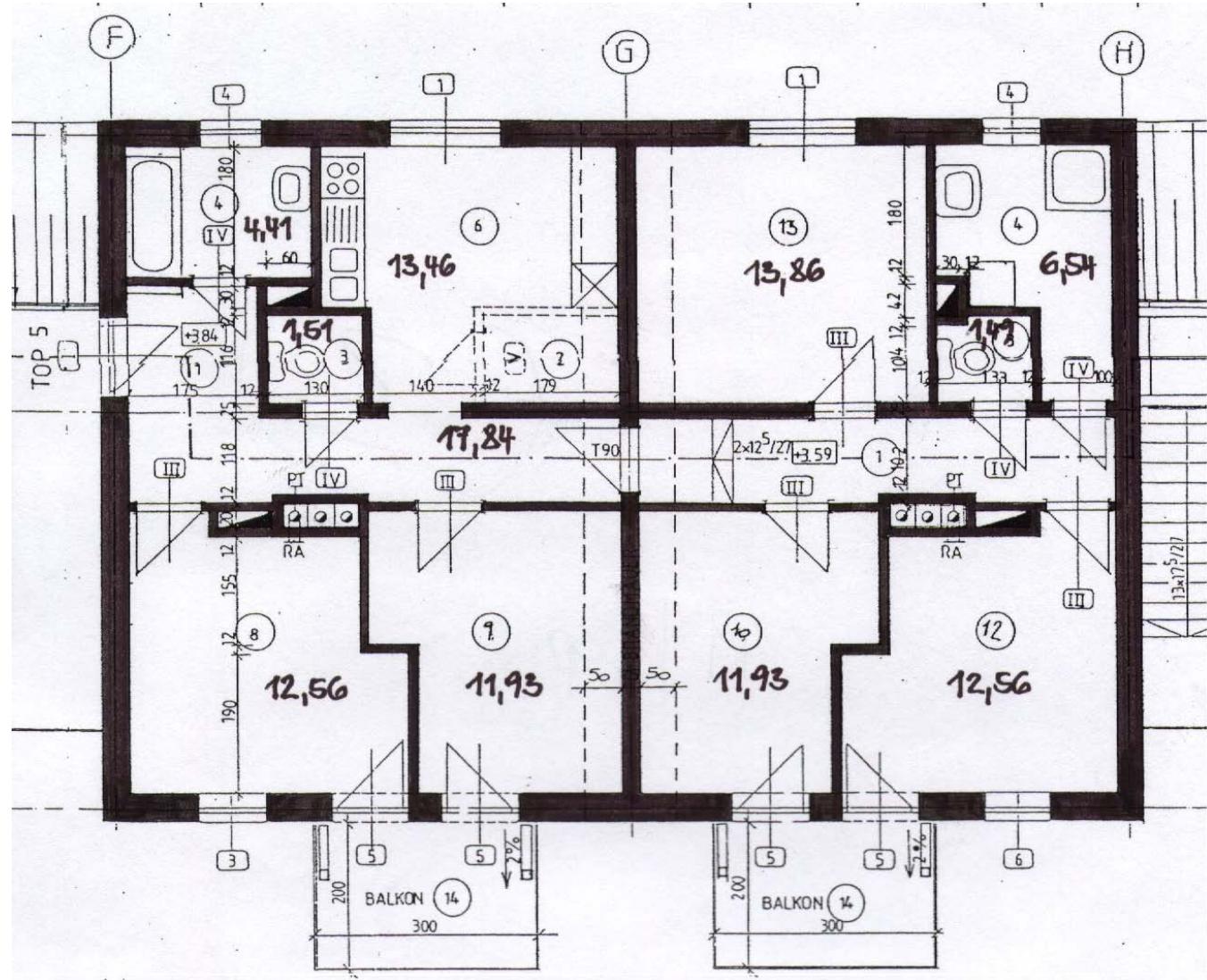




Tannhof 4 GWS 1994



Tannhof 4 GWS 1994



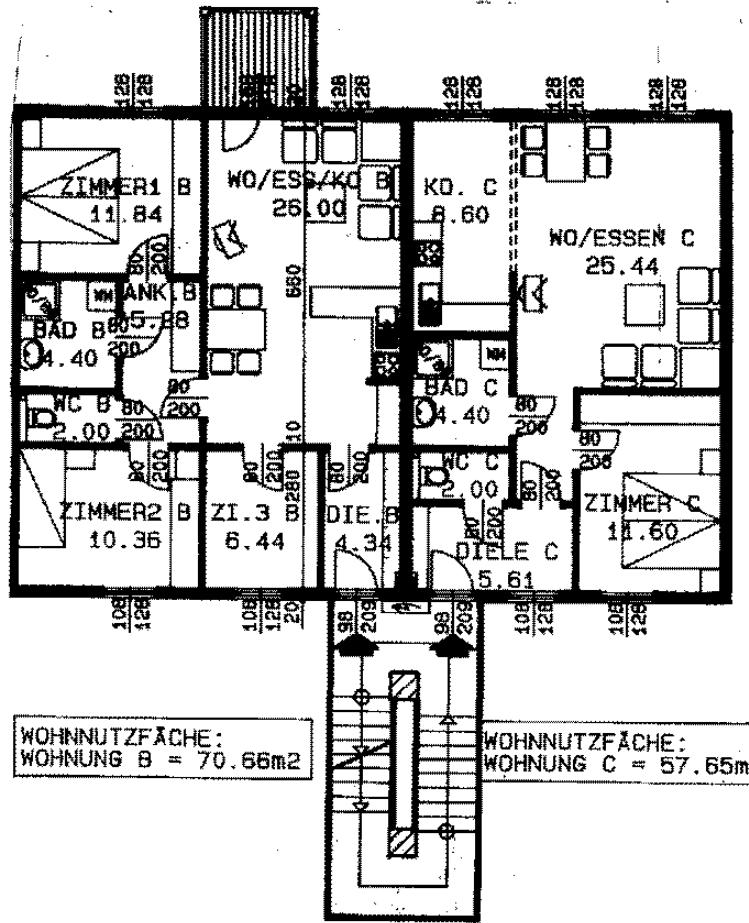
Tannhof 4 GWS 1994



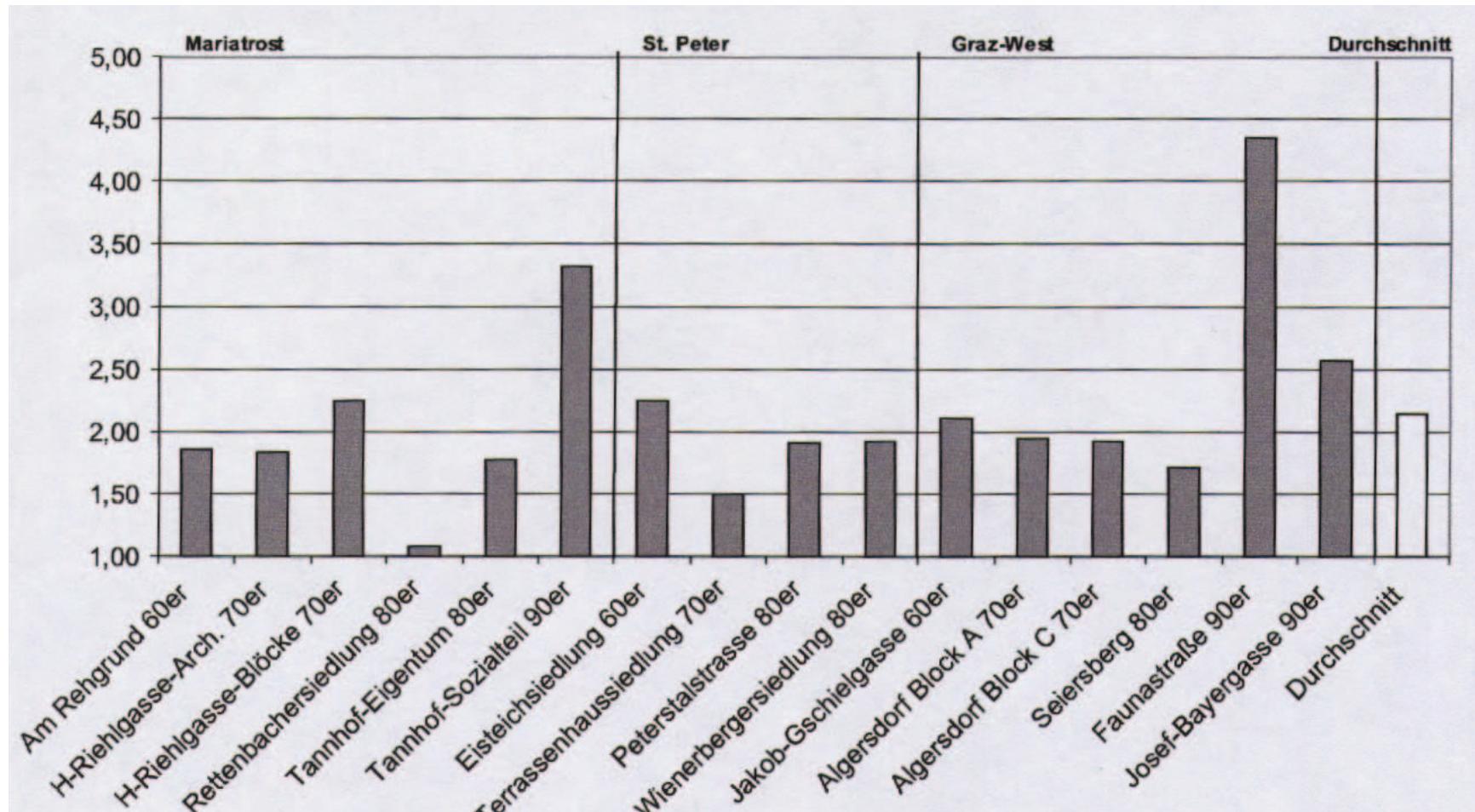
Faunastrasse 1996



Faunastrasse 1996

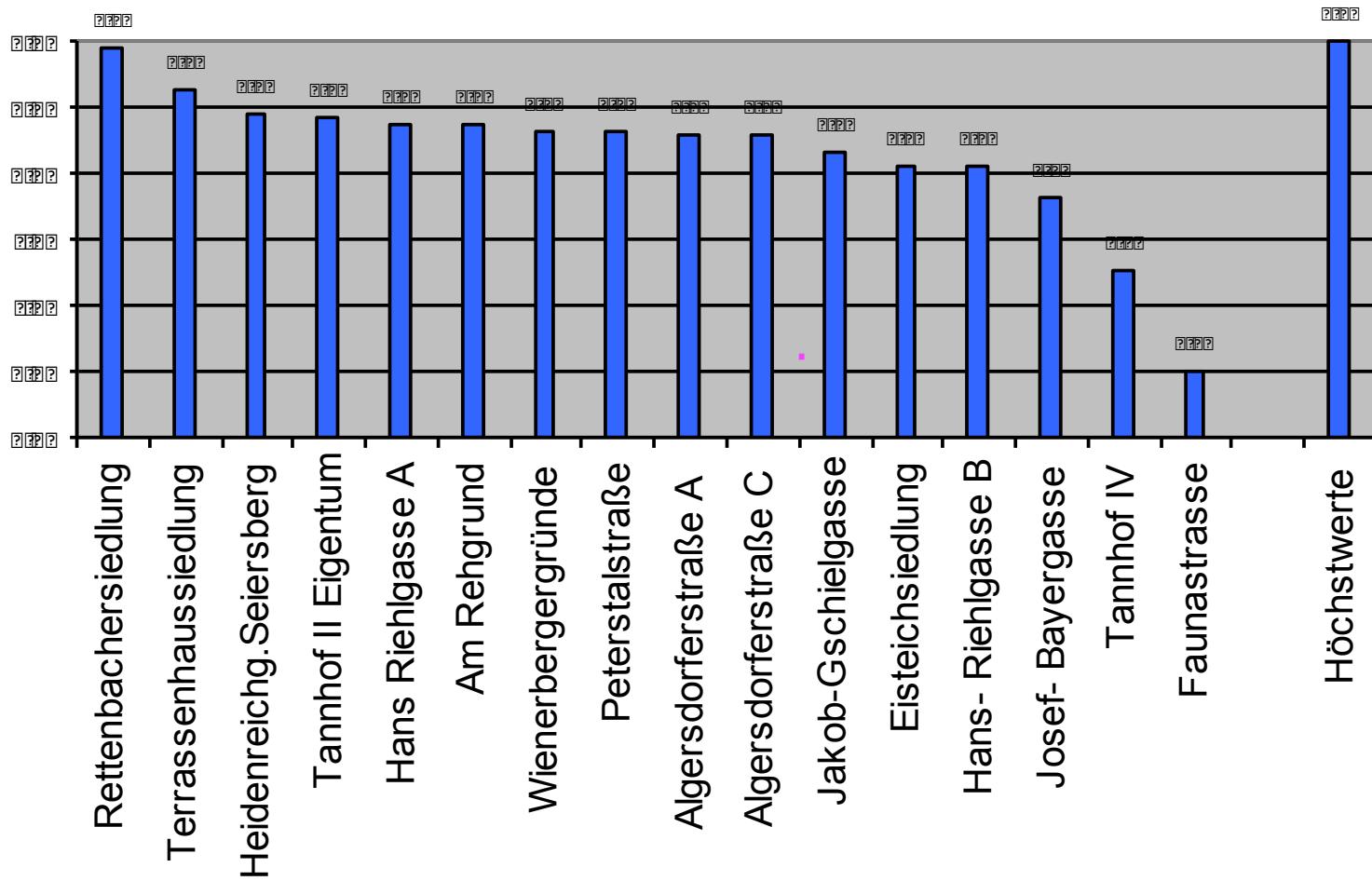


Faunastrasse 1996



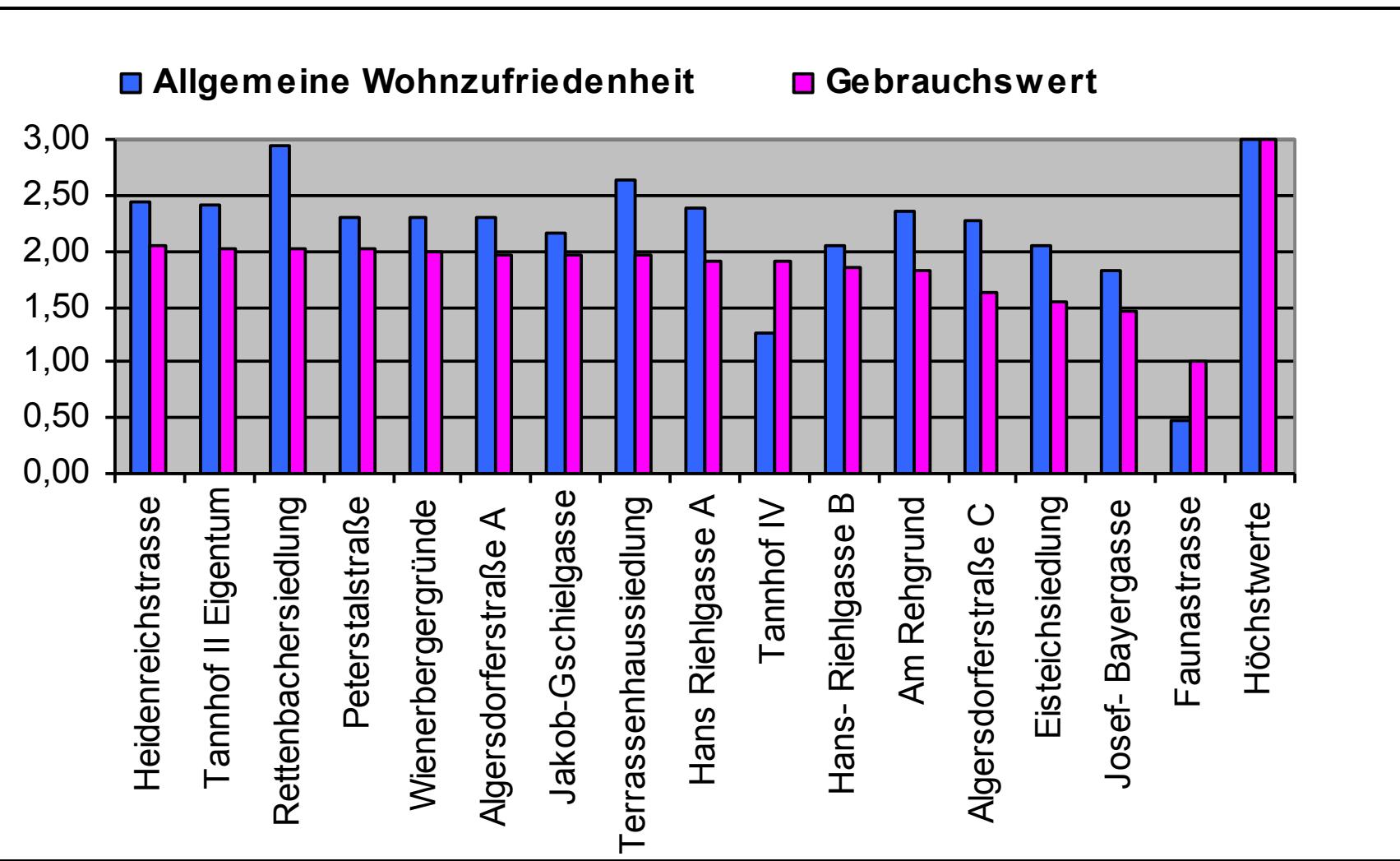
The Result for Housing Satisfaction in the Sociologic Study

## ■ Allgemeine Wohnzufriedenheit



Wohnbauten mit Architektenplanung

Wohnbauten ohne Architektenplanung



The Comparison of the Housing Satisfaction with the Utility Value of the Evaluation System