# Grundflächen und Rauminhalte

Projekt:  Anna

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## Erdgeschoss

**Brutto-Grundfläche:** (Rohbaumaße plus 3.0 cm Außenputz)

5.7×10.3 - 1.06×0.504 - ½×1.06×0.964 - ½×1.25×0.504 - 0.0668×1.47 - ½×0.0668×0.532 + ½×0.702×0.259 + ½×0.259×0.702 + 0.0299×0.259 + ½×0.674×0.249 + ½×0.249×0.674 + 0.748×0.249 + 6.21×8.26 + 1×1.83 + 3.62×6.5 + 0.03 × (1×5.45 + 1×1 + 1×10.1 + 1×10.3 + 1×3.32 + 1×0.718 + 3×0.748 + 1×0.536 + 1×6.21 + 1×2.76 + 1×3.62 + 1×6.5) = 135.69 m²

**Netto-Grundflächen:** (Rohbaumaße minus jeweiliger Innenputzstärke)

*Nutzfläche (a) überdeckt und allseitig in voller Höhe umschlossen:*

### NF - Wohnen und Aufenthalt (a)

| Raum | Berechnung | | Fläche |
|---|---|---|---|
| Wohn-Ess (1.5 cm Putz) | 5.44×6 - 0.604×1.19 - ½×0.604×4.81 - 0.279×0.652 - ½×0.279×0.537 - ½×1.61×0.652 + 6.16×4 - ½×0.502×4 - ½×1.24×1.03 + ½×0.567×0.21 + ½×0.21×0.567 + 0.605×0.21 - 0.36² - (0.015 × (0.17 + 2.76 + 6.16 + 0.817 + 0.605 + 0.605 + 0.605 + 0.635 + 2.92 + 6 + 3.74 + 0.17 + 6)) | = | 52.36 m² |
| Diele (1.5 cm Putz) | ½×0.998×0.0182 + 2.22×1.03 - ½×0.018×1.03 - ½×0.036×2.2 + 2.78×2.01 + 1.28×6 - (0.015 × (0.23 + 3.29 + 6 + 1.3 + 2.55)) | = | 15.30 m² |
| Bad/WC (1.5 cm Putz) | 1.8×2 - (0.015 × (1.8 + 2 + 1.8 + 2)) | = | 3.49 m² |
| Gast (1.5 cm Putz) | 3.74×3.29 - (0.015 × (3.74 + 3.29 + 3.74 + 3.29)) | = | 12.08 m² |
| Raum 7 (1.5 cm Putz) | ½×2.2×0.036 + 1.02×1.03 - ½×0.018×1.03 - ½×0.0182×0.998 + 0.976×3.22 - (0.015 × (3.22 + 1.99)) | = | 4.13 m² |
| Speis (1.5 cm Putz) | 1×2.6 - (0.015 × (1 + 2.6 + 1 + 0.703 + 0.1 + 1.8)) | = | 2.50 m² |
| Küche (1.5 cm Putz) | ½×1.03×1.24 + 1.19×1.03 + 3.62×2.43 + 0.535×1.95 - (0.015 × (2.43 + 3.62 + 1.72 + 1.95 + 0.535 + 2.7)) | = | 11.51 m² |
| Gardeobe (1.5 cm Putz) | 2×2.75 + 0.565×1.95 - (0.015 × (1 + 2.75 + 2 + 0.803 + 0.565 + 1.95 + 1.57)) | = | 6.44 m² |

*NF - Wohnen und Aufenthalt (a) gesamt* = *107.80 m²*

## Netto-Grundfläche gesamt:

6.44 m² + 15.30 m² + 3.49 m² + 12.08 m² + 4.13 m² + 2.50 m² + 11.51 m² + 52.36 m² = 107.80 m²

**Konstruktions-Grundfläche:**

135.69 m² - 107.80 m²                                                      =                   27.89 m²

**Brutto-Rauminhalt:**

2.83 × (5.7×10.3 - 1.06×0.504 - ½×1.06×0.964 - ½×1.25×0.504 - 0.0668×1.47 -
½×0.0668×0.532 + ½×0.702×0.259 + ½×0.259×0.702 + 0.0299×0.259 + ½×0.674×0.249
+ ½×0.249×0.674 + 0.748×0.249 + 6.21×8.26 + 1×1.83 + 3.62×6.5) + 2.83×0.03 ×
(1×5.45 + 1×1 + 1×10.1 + 1×10.3 + 1×3.32 + 1×0.718 + 3×0.748 + 1×0.536 + 1×6.21 +
1×2.76 + 1×3.62 + 1×6.5)                                              =                 384.00 m³

# 1. Obergeschoss

**Brutto-Grundfläche:**     (Rohbaumaße plus 3.0 cm Außenputz)

9.01×5.2 + 0.25×7.56 + ½×0.143×0.98 + 1.97×1.08 - ½×0.264×1.97 - 0.0113×0.734 - ½×0.0113×0.0845 - 0.073×0.545 - ½×0.073×0.189 - 0.0958×0.392 - ½×0.0958×0.153 - 0.404×0.0782 - ½×0.404×0.314 - 0.141×0.0304 - ½×0.141×0.0478 - 0.161×0.00255 - ½×0.161×0.0279 - ½×0.141×0.00255 - ½×0.0225×0.165 - 0.17×0.0225 - ½×0.0542×0.17 - 0.155×0.0767 - ½×0.0815×0.155 - 0.155×0.158 - ½×0.123×0.155 - 0.127×0.281 - ½×0.151×0.127 - 0.0856×0.432 - ½×0.151×0.0856 - 0.0627×0.583 - ½×0.182×0.0627 - 0.0281×0.765 - ½×0.19×0.0281 + ½×0.0106×0.049 + 1×3.31 - ½×0.00649×0.0486 - ½×0.133×0.994 + 5.72×8.26 + 0.925×2.51 - ½×0.011×0.0374 - 0.378×0.011 - ½×0.206×0.378 - 0.133×0.217 - ½×0.119×0.133 - 0.152×0.336 - ½×0.188×0.152 - 0.141×0.524 - ½×0.276×0.141 - 0.072×0.8 - ½×0.287×0.072 - 0.0118×1.09 - ½×0.166×0.0118 - 0.011×1.08 - ½×0.011×0.179 - 0.0426×0.873 - ½×0.0426×0.203 - 0.0796×0.667 - ½×0.0796×0.206 - 0.131×0.452 - ½×0.131×0.215 - 0.169×0.267 - ½×0.169×0.186 - 0.248×0.0882 - ½×0.248×0.178 - ½×0.244×0.0882 + 4.36×8.01 + 5.19×1.75 - 0.0573×1.29 - ½×0.0573×0.456 - 1.4×0.0199 - ½×1.4×1.27 - ½×0.0492×0.0199 + 0.404×0.314 - 0.138×0.0807 - ½×0.138×0.108 - ½×0.152×0.0807 - ½×0.404×0.314 - 0.114×0.189 - ½×0.114×0.125 + ½×0.618×0.228 + ½×0.228×0.618 + 0.659×0.228 + ½×0.13×0.0148 + ½×0.0148×0.13 + 0.17×0.0148 + 0.03 × (1×5.45 + 1×1 + 1×10.1 + 1×0.797 + 1×4.95 + 3×0.25 + 1×0.276 + 1×4.3)     =     146.50 m²

**Netto-Grundflächen:**     (Rohbaumaße minus jeweiliger Innenputzstärke)

*Nutzfläche (a) überdeckt und allseitig in voller Höhe umschlossen:*

   *NF - Wohnen und Aufenthalt (a)*

| | | | |
|---|---|---|---|
| Kind<br>(1.5 cm Putz) | 3.5×3.35 + 1.15×1.2 - (0.015 × (3.5 + 3.35 + 4.65 + 1.2 + 1.15 + 2.15)) | = | 12.87 m² |
| Kind<br>(1.5 cm Putz) | 3.26×4.65 - (0.015 × (3.26 + 4.65 + 2.26 + 1 + 4.65)) | = | 14.94 m² |
| Balkon<br>(1.5 cm Putz) | 5.19×1.75 - 0.0573×1.29 - ½×0.0573×0.456 - 0.304×0.709 - ½×0.304×0.584 - 0.487×0.266 - ½×0.487×0.443 - ½×0.66×0.266 - (0.015 × (0.15 + 5.04)) | = | 8.29 m² |
| Schrankr.<br>(1.5 cm Putz) | 4.32×1.4 - (0.015 × (4.32 + 1.4 + 4.32 + 1.4)) | = | 5.87 m² |
| Schlafzi.<br>(1.5 cm Putz) | 3.79×3.42 + 0.532×2.24 - (0.015 × (3.79 + 3.42 + 4.32 + 2.24 + 0.532 + 1.18)) | = | 13.90 m² |

| | | | |
|---|---|---|---|
| Balkon<br>(1.5 cm Putz) | ½×0.143×0.98 + 1.97×0.998 - ½×0.18×1.35 - 0.0113×0.734 - ½×0.0113×0.0845 - 0.073×0.545 - ½×0.073×0.189 - 0.0958×0.392 - ½×0.0958×0.153 - 0.404×0.0782 - ½×0.404×0.314 - 0.141×0.0304 - ½×0.141×0.0478 - 0.161×0.00255 - ½×0.161×0.0279 - ½×0.141×0.00255 - ½×0.0225×0.165 - 0.17×0.0225 - ½×0.0542×0.17 - 0.155×0.0767 - ½×0.0815×0.155 - 0.155×0.158 - ½×0.123×0.155 - 0.127×0.281 - ½×0.151×0.127 - 0.0856×0.432 - ½×0.151×0.0856 - 0.0627×0.583 - ½×0.182×0.0627 - 0.0281×0.765 - ½×0.19×0.0281 + 0.374×0.05 - ½×0.05×0.374 - ½×0.05×0.004 + 0.404×0.314 - 0.138×0.0807 - ½×0.138×0.108 - ½×0.152×0.0807 - ½×0.404×0.314 - 0.114×0.189 - ½×0.114×0.125 + 3.26×1 - (0.015 × (3.26)) | = | 4.73 m$^2$ |
| Balkon<br>(1.5 cm Putz) | 0.925×2.51 - ½×0.244×0.0882 - ½×0.011×0.0374 - 0.122×0.011 - ½×0.0495×0.122 - 0.149×0.0605 - ½×0.0813×0.149 - 0.107×0.142 - ½×0.0753×0.107 - 0.133×0.217 - ½×0.119×0.133 - 0.152×0.336 - ½×0.188×0.152 - 0.141×0.524 - ½×0.276×0.141 - 0.072×0.8 - ½×0.287×0.072 - 0.0118×1.09 - ½×0.166×0.0118 - 0.011×1.08 - ½×0.011×0.179 - 0.0426×0.873 - ½×0.0426×0.203 - 0.0796×0.667 - ½×0.0796×0.206 - 0.131×0.452 - ½×0.131×0.215 - 0.169×0.267 - ½×0.169×0.186 - 0.248×0.0882 - ½×0.248×0.178 - (0.015 × (2.51)) | = | 1.66 m$^2$ |
| Bad/WC<br>(1.5 cm Putz) | 3.74×2.99 - (0.015 × (3.74 + 2.99 + 3.74 + 2.99)) | = | 10.97 m$^2$ |
| WC<br>(1.5 cm Putz) | 1×2 - (0.015 × (1 + 1 + 2 + 1 + 1)) | = | 1.91 m$^2$ |
| *NF - Wohnen und Aufenthalt (a) gesamt* | | = | *75.15 m$^2$* |

*Nutzfläche (b) überdeckt, jedoch nicht allseitig in voller Höhe umschlossen:*

*NF - Wohnen und Aufenthalt (b):*

| | | | |
|---|---|---|---|
| Luftr.<br>(1.5 cm Putz) | 3.22×2.09 - ½×2.08×0.00369 - ½×3.22×0.004 - (0.015 × (3.22 + 2.09)) | = | 6.63 m$^2$ |

*Nutzfläche (c) nicht überdeckt, aber umschlossen:*

*NF - Wohnen und Aufenthalt (c):*

| | | | |
|---|---|---|---|
| Atrium<br>(1.5 cm Putz) | 4.36×4.04 + 5.2×1.44 - (0.015 × (4.04 + 2.59 + 5.2)) | = | 24.92 m$^2$ |
| Galerie<br>(1.5 cm Putz) | ½×0.004×3.22 + 1.41×3.22 + ½×0.00369×2.08 + 2.78×3.5 + 0.07×4.36 - (0.015 × (0.23 + 3.5 + 0.23 + 0.07 + 0.07 + 0.4 + 1.01 + 0.362 + 1.05 + 2.55)) | = | 14.44 m$^2$ |
| *NF - Wohnen und Aufenthalt (c) gesamt* | | = | *39.35 m$^2$* |

## Netto-Grundfläche gesamt:

1.91 m² + 14.44 m² + 12.87 m² + 10.97 m² + 6.63 m² + 14.94 m² + 4.73 m² + 1.66 m² +     =     121.13 m²
8.29 m² + 5.87 m² + 24.92 m² + 13.90 m²

## Konstruktions-Grundfläche:

146.50 m² - 121.13 m²     =     25.37 m²

## Brutto-Rauminhalt:

2.83 × (9.01×5.2 + 0.25×7.56 + ½×0.143×0.98 + 1.97×1.08 - ½×0.264×1.97 -     =     414.60 m³
0.0113×0.734 - ½×0.0113×0.0845 - 0.073×0.545 - ½×0.073×0.189 - 0.0958×0.392 -
½×0.0958×0.153 - 0.404×0.0782 - ½×0.404×0.314 - 0.141×0.0304 - ½×0.141×0.0478 -
0.161×0.00255 - ½×0.161×0.0279 - ½×0.141×0.00255 - ½×0.0225×0.165 - 0.17×0.0225
- ½×0.0542×0.17 - 0.155×0.0767 - ½×0.0815×0.155 - 0.155×0.158 - ½×0.123×0.155 -
0.127×0.281 - ½×0.151×0.127 - 0.0856×0.432 - ½×0.151×0.0856 - 0.0627×0.583 -
½×0.182×0.0627 - 0.0281×0.765 - ½×0.19×0.0281 + ½×0.0106×0.049 + 1×3.31 -
½×0.00649×0.0486 - ½×0.133×0.994 + 5.72×8.26 + 0.925×2.51 - ½×0.011×0.0374 -
0.378×0.011 - ½×0.206×0.378 - 0.133×0.217 - ½×0.119×0.133 - 0.152×0.336 -
½×0.188×0.152 - 0.141×0.524 - ½×0.276×0.141 - 0.072×0.8 - ½×0.287×0.072 -
0.0118×1.09 - ½×0.166×0.0118 - 0.011×1.08 - ½×0.011×0.179 - 0.0426×0.873 -
½×0.0426×0.203 - 0.0796×0.667 - ½×0.0796×0.206 - 0.131×0.452 - ½×0.131×0.215 -
0.169×0.267 - ½×0.169×0.186 - 0.248×0.0882 - ½×0.248×0.178 - ½×0.244×0.0882 +
4.36×8.01 + 5.19×1.75 - 0.0573×1.29 - ½×0.0573×0.456 - 1.4×0.0199 - ½×1.4×1.27 -
½×0.0492×0.0199 + 0.404×0.314 - 0.138×0.0807 - ½×0.138×0.108 - ½×0.152×0.0807 -
½×0.404×0.314 - 0.114×0.189 - ½×0.114×0.125 + ½×0.618×0.228 + ½×0.228×0.618 +
0.659×0.228 + ½×0.13×0.0148 + ½×0.0148×0.13 + 0.17×0.0148) + 2.83×0.03 × (1×5.45
+ 1×1 + 1×10.1 + 1×0.797 + 1×4.95 + 3×0.25 + 1×0.276 + 1×4.3)

# Zusammenstellung

## Nutzflächen (NF):

| Erdgeschoss | a | b | c | a + b + c |
|---|---|---|---|---|
| NF - Wohnen und Aufenthalt | 107.80 | 0.00 | 0.00 | 107.80 |
| 1. Obergeschoss | a | b | c | a + b + c |
| NF - Wohnen und Aufenthalt | 75.15 | 6.63 | 39.35 | 121.13 |

**Netto-Grundfäche gesamt (NF+TF+VF):**

| | a | b | c | a + b + c |
|---|---|---|---|---|
| NGF Erdgeschoss | 107.80 | 0.00 | 0.00 | 107.80 |
| NGF 1. Obergeschoss | 75.15 | 6.63 | 39.35 | 121.13 |
| NGF gesamt | 182.94 | 6.63 | 39.35 | 228.93 |

| | |
|---|---|
| **Konstruktions-Grundfläche** | **53.26** |
| **Brutto-Grundfläche (NGF + KGF) =** | **282.19** |
| **Brutto-Rauminhalt gesamt =** | **798.60** |