

Projekt-Nr.: 2019_BRAN2

Datum: 13.03.2019

Projektdaten

Bezeichnung: Sanierung Mehrfamilienhaus

Straße:

LKZ/PLZ/Ort:

Telefon:

Fax:

Bauherr/Auftraggeber

Name:

Straße:

LKZ/PLZ/Ort:

Telefon:

Fax:

eMail:

Sachbearbeiter:

Planer

Name: hls conceptplaner GmbH

Straße: Spandauer str.112

LKZ/PLZ/Ort: 14612 Falkensee

Telefon: 033224257852

Fax:

eMail: info@hls-concept-planer.de

Sachbearbeiter:

Berechnungen

Heizkörperauslegung nach EN442

Wärmebilanz

| Erdgeschoss 00 | | | | | | | | |
|---|-----------------|----------------------|-------------|---------------------|---------------------|-------------------------|---------------------------------------|----------------|
| | Innentemperatur | spezifische Heizlast | Heizlast | bereinigte Heizlast | Leistung Heizkörper | Leistung Flächenheizung | '+' = Restleistung '-' = Überschuß | Deckungsanteil |
| Raum-Nr./ -Name | θ_{int} | Φ_{HL} | Φ_{HL} | Φ^*_{HL} | Φ_{HK} | Φ_{Fb} | Φ_{Rest} | |
| Fläche [m ²] | °C | W/m ² | W | | | | | % |
| 00/05/05 Wohnen A = 19.4 m ² | 20.0 | 76 | 1466 | 1466 | 1466 | | 0 | 100 |
| 00/05/06 Flur A = 5.4 m ² | 15.0 | 0 | 0 | 0 | | | - | - |
| 1. Obergeschoss 01 | | | | | | | | |
| | Innentemperatur | spezifische Heizlast | Heizlast | bereinigte Heizlast | Leistung Heizkörper | Leistung Flächenheizung | '+' = Restleistung '-' = Überschuß | Deckungsanteil |
| Raum-Nr./ -Name | θ_{int} | Φ_{HL} | Φ_{HL} | Φ^*_{HL} | Φ_{HK} | Φ_{Fb} | Φ_{Rest} | |
| Fläche [m ²] | °C | W/m ² | W | | | | | % |
| 01/01/01 Treppenhaus A = 13.8 m ² | 20.0 | 61 | 839 | 839 | | | 839 | 0 |
| 01/01/02 Treppenhaus A = 15.2 m ² | 20.0 | 66 | 1009 | 1009 | | | 1009 | 0 |
| 01/02/01 Schlafzimmer A = 15.9 m ² | 20.0 | 63 | 993 | 993 | 993 | | 0 | 100 |
| 01/02/02 Wohnen A = 17.5 m ² | 20.0 | 49 | 855 | 855 | 855 | | 0 | 100 |
| 01/02/03 Kinderzimmer A = 12.8 m ² | 20.0 | 53 | 674 | 674 | 674 | | 0 | 100 |
| 01/02/04 Badezimmer A = 3.2 m ² | 20.0 | 24 | 78 | 78 | | | 78 | 0 |
| 01/02/05 Abstellraum A = 3.3 m ² | 20.0 | 35 | 113 | 113 | | | 113 | 0 |
| 01/02/06 Küche A = 10.4 m ² | 20.0 | 41 | 425 | 425 | 425 | | 0 | 100 |
| 01/02/07 Flur A = 6.1 m ² | 15.0 | 0 | 0 | 0 | | | - | - |
| 01/03/01 Badezimmer A = 7.0 m ² | 24.0 | 115 | 811 | 811 | 811 | | 0 | 100 |
| 01/03/02 Küche A = 13.3 m ² | 20.0 | 32 | 426 | 426 | 426 | | 0 | 100 |
| 01/03/03 Flur A = 18.1 m ² | 20.0 | 23 | 415 | 415 | | | 415 | 0 |
| 01/03/04 Schlafzimmer A = 15.8 m ² | 20.0 | 47 | 739 | 739 | 739 | | 0 | 100 |
| 01/03/05 Wohnen A = 24.1 m ² | 20.0 | 46 | 1106 | 1106 | 1106 | | 0 | 100 |
| 01/03/06 Kinderzimmer1 A = 18.0 m ² | 20.0 | 44 | 797 | 797 | 798 | | -1 | 100 |
| 01/03/07 Kinderzimmer2 A = 17.5 m ² | 20.0 | 54 | 946 | 946 | 946 | | 0 | 100 |

Heizkörper Zusammenstellung

| Hersteller: | | RIE - Arbonia Heizkörper | | | | | | | | | | | | |
|--------------------|--------------|---------------------------------|----|----|------|--------|---|----|-----|------|-----|------|------|----|
| Ort | Raumname | Phi-N. | ti | Az | NL | Phi-HK | M | ML | BH | BL | BT | tr | m | St |
| | | W | °C | HK | mm | W | | % | mm | mm | mm | °C | kg/h | |
| | | Modellreihe-Typ | | | | | | | | | | | | |
| 01/04/02 | Küche | 713 | 20 | 1 | 1000 | 713 | - | - | 600 | 720 | 105 | 49.2 | 29.5 | 8 |
| | | Röhrenradiator, 3060, 105 mm | | | | | | | | | | | | |
| 01/04/05 | Badezimmer | 272 | 24 | 1 | 600 | 272 | - | - | 600 | 315 | 105 | 49.8 | 11.6 | 8 |
| | | Röhrenradiator, 3060, 105 mm | | | | | | | | | | | | |
| 01/04/06 | Kinderzimmer | 709 | 20 | 1 | 1000 | 709 | - | - | 600 | 720 | 105 | 48.9 | 28.9 | 8 |
| | | Röhrenradiator, 3060, 105 mm | | | | | | | | | | | | |
| 01/04/07 | Wohnen | 934 | 20 | 1 | 1000 | 934 | - | - | 600 | 720 | 145 | 49.9 | 40.0 | 10 |
| | | Röhrenradiator, 4060, 145 mm | | | | | | | | | | | | |
| 01/04/08 | Schlafzimmer | 720 | 20 | 1 | 2000 | 720 | - | - | 600 | 1710 | 65 | 30.5 | 15.7 | 9 |
| | | Röhrenradiator, 2060, 65 mm | | | | | | | | | | | | |
| 01/05/01 | Wohnen | 1036 | 20 | 1 | 1000 | 1036 | - | - | 600 | 720 | 145 | 55.3 | 60.6 | 6 |
| | | Röhrenradiator, 4060, 145 mm | | | | | | | | | | | | |
| 01/05/02 | Schlafzimmer | 547 | 20 | 1 | 1500 | 547 | - | - | 600 | 1215 | 65 | 32.1 | 12.5 | 6 |
| | | Röhrenradiator, 2060, 65 mm | | | | | | | | | | | | |
| 01/05/04 | Küche | 419 | 20 | 1 | 1100 | 419 | - | - | 600 | 810 | 65 | 35.7 | 10.5 | 7 |
| | | Röhrenradiator, 2060, 65 mm | | | | | | | | | | | | |
| 01/05/05 | Badezimmer | 731 | 24 | 1 | 1000 | 549 | - | - | 600 | 270 | 225 | 62.0 | 59.0 | 7 |
| | | Röhrenradiator, 6060, 225 mm | | | | | | | | | | | | |
| 02/02/01 | Schlafzimmer | 1055 | 20 | 1 | 2000 | 1055 | - | - | 600 | 1710 | 65 | 41.7 | 32.1 | 2 |
| | | Röhrenradiator, 2060, 65 mm | | | | | | | | | | | | |
| 02/02/02 | Wohnen | 884 | 20 | 1 | 900 | 884 | - | - | 600 | 630 | 145 | 53.9 | 47.2 | 11 |
| | | Röhrenradiator, 4060, 145 mm | | | | | | | | | | | | |
| 02/02/03 | Kinderzimmer | 603 | 20 | 1 | 1100 | 603 | - | - | 600 | 810 | 65 | 50.0 | 26.0 | 1 |
| | | Röhrenradiator, 2060, 65 mm | | | | | | | | | | | | |
| 02/02/04 | Badezimmer | 303 | 20 | 1 | 1000 | 303 | - | - | 600 | 405 | 65 | 50.2 | 13.2 | 1 |
| | | Röhrenradiator, 2060, 65 mm | | | | | | | | | | | | |
| 02/02/05 | Küche | 313 | 20 | 1 | 1000 | 313 | - | - | 600 | 450 | 65 | 46.7 | 11.6 | 1 |
| | | Röhrenradiator, 2060, 65 mm | | | | | | | | | | | | |
| 02/03/01 | Badezimmer | 685 | 24 | 1 | 1000 | 685 | - | - | 600 | 630 | 105 | 61.1 | 66.2 | 3 |
| | | Röhrenradiator, 3060, 105 mm | | | | | | | | | | | | |
| 02/03/02 | Küche | 404 | 20 | 1 | 800 | 404 | - | - | 600 | 540 | 65 | 50.2 | 17.6 | 3 |
| | | Röhrenradiator, 2060, 65 mm | | | | | | | | | | | | |

Heizkörper Zusammenstellung

| Stränge und Verteiler | | | | |
|------------------------------|--------------|-----------------|------------------|-----------|
| Nr | Bezeichnung | t-Vorlauf °C | t-Rücklauf °C | m kg/h |
| 1 | Strang 1 Hz | 70.0 | 55.0 | 341.0 |
| 2 | Strang 2 Hz | 70.0 | 55.0 | 123.2 |
| 3 | Strang 3 Hz | 70.0 | 55.0 | 305.2 |
| 4 | Strang 4 Hz | 70.0 | 55.0 | 552.4 |
| 5 | Strang 5 Hz | 70.0 | 55.0 | 169.6 |
| 6 | Strang 6 Hz | 70.0 | 55.0 | 309.6 |
| 7 | Strang 7 Hz | 70.0 | 55.0 | 254.4 |
| 8 | Strang 8 Hz | 70.0 | 55.0 | 514.9 |
| 9 | Strang 9 Hz | 70.0 | 55.0 | 149.2 |
| 10 | Strang 10 Hz | 70.0 | 55.0 | 154.9 |
| 11 | Strang 0 Hz | 70.0 | 55.0 | 171.1 |

| Summen | | | |
|-------------------|--------------|--------------------------|---------------------|
| Anzahl Heizkörper | Phi-HK kW | Fläche m ² | Massenstrom kg/h |
| 95 | 65.6 | 230.7 | 3045.5 |

| Legende | |
|---|---|
| <i>Ort: Geschoß-Nr./Raum-Nr.</i> | <i>t_i: Rauminnentemperatur</i> |
| <i>Phi-N: Heizlast</i> | <i>NL: Nischenlänge</i> |
| <i>Az: Anzahl Heizkörper</i> | <i>M: Auslegemodus (1...4 oder M für Manuell)</i> |
| <i>Phi-HK: Leistung des Heizkörpers</i> | <i>BH/BL/BT: Höhe/Länge/Tiefe des Heizkörpers</i> |
| <i>ML: Minderleistung</i> | <i>m: Massenstrom</i> |
| <i>tr: Rücklauftemperatur</i> | <i>!: Fehlermarkierung</i> |
| <i>St: Strangnummer</i> | |

Heizkörper Bestellliste

| Hersteller: RIE - Arbonia Heizkörper | | | | | | | |
|---|----|----------|----------|----------|-------|-----|---------------|
| HK - Typ / Konsolen / Halter | Az | BH mm | BL mm | BT mm | lfdm. | Gl | Bestellnummer |
| Röhrenradiator, 6060, 225 mm | 2 | 600 | 270 | 225 | 0.54 | 12 | RRN6060 |
| Röhrenradiator, 2060, 65 mm | 1 | 600 | 315 | 65 | 0.32 | 7 | RRN2060 |
| Röhrenradiator, 3060, 105 mm | 1 | 600 | 315 | 105 | 0.32 | 7 | RRN3060 |
| Röhrenradiator, 2060, 65 mm | 3 | 600 | 405 | 65 | 1.22 | 27 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 1 | 600 | 450 | 65 | 0.45 | 10 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 3 | 600 | 540 | 65 | 1.62 | 36 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 9 | 600 | 630 | 65 | 5.67 | 126 | RRN2060 |
| Röhrenradiator, 3060, 105 mm | 3 | 600 | 630 | 105 | 1.89 | 42 | RRN3060 |
| Röhrenradiator, 4060, 145 mm | 3 | 600 | 630 | 145 | 1.89 | 42 | RRN4060 |
| Röhrenradiator, 2060, 65 mm | 10 | 600 | 720 | 65 | 7.20 | 160 | RRN2060 |
| Röhrenradiator, 3060, 105 mm | 5 | 600 | 720 | 105 | 3.60 | 80 | RRN3060 |
| Röhrenradiator, 4060, 145 mm | 6 | 600 | 720 | 145 | 4.32 | 96 | RRN4060 |
| Röhrenradiator, 2060, 65 mm | 3 | 600 | 810 | 65 | 2.43 | 54 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 1 | 600 | 945 | 65 | 0.94 | 21 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 1 | 600 | 1125 | 65 | 1.13 | 25 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 2 | 600 | 1215 | 65 | 2.43 | 54 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 1 | 600 | 1305 | 65 | 1.30 | 29 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 1 | 600 | 1440 | 65 | 1.44 | 32 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 1 | 600 | 1620 | 65 | 1.62 | 36 | RRN2060 |
| Röhrenradiator, 2060, 65 mm | 10 | 600 | 1710 | 65 | 17.10 | 380 | RRN2060 |
| Röhrenradiator, 4075, 145 mm | 1 | 750 | 540 | 145 | 0.54 | 12 | RRN4075 |
| Röhrenradiator, 6075, 225 mm | 1 | 750 | 540 | 225 | 0.54 | 12 | RRN6075 |
| Röhrenradiator, 2075, 65 mm | 2 | 750 | 630 | 65 | 1.26 | 28 | RRN2075 |
| Röhrenradiator, 2075, 65 mm | 7 | 750 | 720 | 65 | 5.04 | 112 | RRN2075 |
| Röhrenradiator, 3075, 105 mm | 3 | 750 | 720 | 105 | 2.16 | 48 | RRN3075 |
| Röhrenradiator, 4075, 145 mm | 1 | 750 | 720 | 145 | 0.72 | 16 | RRN4075 |
| Röhrenradiator, 5075, 185 mm | 2 | 750 | 720 | 185 | 1.44 | 32 | RRN5075 |
| Röhrenradiator, 2075, 65 mm | 1 | 750 | 810 | 65 | 0.81 | 18 | RRN2075 |
| Röhrenradiator, 2075, 65 mm | 2 | 750 | 1710 | 65 | 3.42 | 76 | RRN2075 |
| Röhrenradiator, 5100, 185 mm | 1 | 1000 | 270 | 185 | 0.27 | 6 | RRN5100 |
| Röhrenradiator, 2100, 65 mm | 1 | 1000 | 540 | 65 | 0.54 | 12 | RRN2100 |
| Röhrenradiator, 2100, 65 mm | 3 | 1000 | 720 | 65 | 2.16 | 48 | RRN2100 |
| Röhrenradiator, 2100, 65 mm | 1 | 1000 | 1440 | 65 | 1.44 | 32 | RRN2100 |
| Röhrenradiator, 5120, 185 mm | 1 | 1200 | 315 | 185 | 0.32 | 7 | RRN5120 |
| Röhrenradiator, 2180, 65 mm | 1 | 1800 | 720 | 65 | 0.72 | 16 | RRN2180 |

*Legende**Az: Anzahl Heizkörper**BH/BL/BT: Bauhöhe/-länge/-tiefe*