

Dipl. Ing. Jan Marius Geller Architekt AKNW**Bismarckstr. 68a - 33330 Gütersloh****Tel 05241/5058636**

Objekt: Errichtung eines Wohnhauses, 11 WE und Tiefgarage
Rietberger Str. 22+24, 33378 Rheda-Wiedenbrück
Gemark.: Wiedenbrück; Flur: 3 ; Flurst.: 61, 1179m²

Bauherr: Bauherrengemeinschaft
Heinrich Krähenhorst Hochbau GmbH
sowie Alexander und Christian Henz
Haselhorststr. 50
33397 Rietberg

1 Berechnung der bebauten Fläche

	<i>Länge (m)</i>	<i>Breite (m)</i>		<i>Fläche (m²)</i>	
Wohnhaus	10,790 *	17,750 *	1,000 *	2,000	
	3,040 *	15,720 *	1,000 *	1,000 =	430,83
Rampe	6,225 *	8,465 *	1,000 *	1,000	
	-5,205 *	5,205 *	1,000 *	0,500	
	-0,685 *	3,065 *	1,000 *	0,500	
	4,100 *	12,785 *	1,000 *	1,000	
	3,500 *	3,000 *	1,000 *	1,000	
	4,470 *	0,920 *	0,500 *	1,000	
	0,605 *	2,690 *	0,500 *	1,000 =	103,89
TG ausserhalb Haus	1,300 *	12,310 *	1,000 *	1,000	
	24,620 *	5,220 *	1,000 *	1,000	
	1,900 *	14,125 *	1,000 *	1,000	
	0,720 *	5,855 *	1,000 *	1,000	
	-0,720 *	2,960 *	1,000 *	0,500 =	174,51
Summe bebaute Fläche					709,23

2 Berechnung des umbauten Raumes nach DIN 277 (1987)

	<i>Länge (m)</i>	<i>Breite (m)</i>	<i>Höhe (m)</i>	<i>Volumen (m³)</i>	
Kellergeschoß	24,620 *	10,660 *	3,300 *	1,000	
	-3,040 *	1,030 *	3,300 *	1,000	
	1,300 *	12,310 *	3,300 *	1,000	
	24,620 *	5,840 *	3,300 *	1,000	
	2,930 *	6,155 *	1,000 *	1,000	
	-0,540 *	3,055 *	1,000 *	0,500 =	1400,25
Rampe	8,130 *	8,270 *	3,300 *	1,000	
	-0,635 *	2,765 *	3,300 *	0,500	
	-5,205 *	5,205 *	3,300 *	0,500	
	4,100 *	12,785 *	3,300 *	1,000	
	4,100 *	0,920 *	3,300 *	1,000	
	0,605 *	2,895 *	3,300 *	1,000	
	3,500 *	3,000 *	0,300 *	0,500 =	367,06
Erdgeschoß	10,790 *	17,750 *	2,900 *	2,000	
	3,040 *	15,720 *	2,900 *	1,000 =	1249,42
Obergeschoß	10,790 *	17,750 *	2,920 *	2,000	
	3,040 *	15,720 *	2,920 *	1,000 =	1258,03
Dach	10,790 *	17,750 *	0,720 *	2,000	
	3,040 *	15,720 *	3,160 *	1,000	

	10,790 *	17,750 *	5,395 *	1,000	
	15,720 *	2,440 *	2,440 *	1,000	
	3,250 *	2,440 *	2,440 *	1,000 =	2831,04
Summe					7105,80

3 Berechnung der Wohnfläche / WoFIV
Es wird ein pauschaler Putzabzug von 1,5 cm je Wand zugrundegelegt

	<i>Länge (m)</i>	<i>Breite (m)</i>		<i>Fläche (m²)</i>
<u>Erdgeschoss</u>				
<u>WE 1</u>				
Kochen/Wohnen	1,890 *	3,000 *	1,000	
	5,315 *	3,640 *	1,000	= 25,02
Schlafen	2,900 *	4,615 *	1,000	= 13,38
Bad	2,190 *	2,820 *	1,000	= 6,18
Abst.	1,370 *	0,500 *	1,000	= 0,69
Diele	1,200 *	1,760 *	1,000	
	2,730 *	1,880 *	1,000	
	1,515 *	1,235 *	1,000	= 9,12
Freisitz	2,400 *	3,000 *	0,500	
	-0,350 *	0,350 *	0,500	= 3,54
Summe WE 1 EG				57,92
<u>WE 2 EG</u>				
Kochen/Wohnen	2,070 *	3,750 *	1,000	
	5,315 *	3,530 *	1,000	
	-1,745 *	0,135 *	1,000	= 26,29
Diele	4,245 *	1,715 *	1,000	
	1,200 *	4,100 *	1,000	
	0,400 *	2,060 *	1,000	= 13,02
Abst.	1,235 *	1,915 *	1,000	= 2,37
WC	1,120 *	1,915 *	1,000	= 2,14
Bad	2,245 *	3,705 *	1,000	
	-0,500 *	0,250 *	1,000	= 8,19
Schlafen	2,900 *	5,745 *	1,000	= 16,66
Kind	5,315 *	2,280 *	1,000	= 12,12
Freisitz	2,200 *	3,750 *	0,500	
	-0,350 *	0,350 *	0,500	= 4,06
Summe WE 2 EG				84,86

WE 3 EG

Kochen/Wohnen	2,360 *	3,750 *	1,000		
	5,790 *	3,180 *	1,000		
	-1,230 *	0,135 *	1,000		
	1,000 *	1,510 *	1,000	=	28,61
Diele	1,250 *	3,560 *	1,000		
	1,810 *	1,820 *	1,000		
	2,270 *	1,390 *	1,000	=	10,90
Abst.	1,125 *	1,510 *	1,000	=	1,70
Bad	2,430 *	3,705 *	1,000		
	-0,500 *	0,250 *	1,000	=	8,88
Schlafen	2,900 *	4,590 *	1,000		
	0,865 *	1,705 *	1,000	=	14,79
Kind	2,425 *	3,705 *	1,000		
	0,615 *	2,705 *	1,000	=	10,65
Freisitz	2,200 *	3,750 *	0,500		
	-0,350 *	0,350 *	0,500	=	4,06
Summe WE 3 EG					79,58

WE 4 EG

Kochen/Wohnen	1,890 *	3,000 *	1,000		
	5,315 *	3,645 *	1,000	=	25,04
Schlafen	2,900 *	5,020 *	1,000	=	14,56
Bad	2,290 *	3,095 *	1,000	=	7,09
Kind	5,315 *	2,220 *	1,000	=	11,80
Abst.	2,385 *	1,090 *	1,000	=	2,60
HWR	2,300 *	1,480 *	1,000	=	3,40
Diele	1,200 *	4,900 *	1,000		
	0,250 *	3,010 *	1,000		
	2,930 *	1,350 *	1,000		
	1,715 *	0,535 *	1,000	=	11,51
Freisitz	2,300 *	3,400 *	0,500		
	-0,350 *	0,350 *	0,500	=	3,85
Summe WE 4 EG					79,85

WE 5 OG*wie WE 1***57,92****WE 6 EG**

Kochen/Wohnen	2,070 *	3,750 *	1,000		
	5,315 *	3,530 *	1,000		
	-1,745 *	0,135 *	1,000	=	26,29
Diele	4,245 *	1,715 *	1,000		
	1,200 *	4,100 *	1,000		
	0,400 *	2,060 *	1,000	=	13,02
Abst.	2,500 *	1,915 *	1,000	=	4,79
Bad	2,245 *	3,705 *	1,000		
	-0,500 *	0,250 *	1,000	=	8,19
Schlafen	2,900 *	5,745 *	1,000	=	16,66
Kind	5,315 *	2,280 *	1,000	=	12,12
Freisitz	2,200 *	3,750 *	0,500		
	-0,350 *	0,350 *	0,500	=	4,06
Summe WE 6 EG					85,14

WE 7 OG*wie WE 3***79,58****WE 8 OG***wie WE 4***79,85**

WE 9 DG

Kochen/Wohnen	4,495 *	3,715 *	1,000		
	5,245 *	4,400 *	1,000		
	2,900 *	3,410 *	1,000		
	-0,250 *	1,000 *	1,000		
	-1,000 *	1,000 *	0,500		
	-0,250 *	1,465 *	1,000		
	-1,000 *	1,465 *	0,500	=	47,82
Diele	3,275 *	1,595 *	1,000		
	1,945 *	3,845 *	1,000		
	1,200 *	1,810 *	1,000	=	14,87
Abst.	1,780 *	2,070 *	1,000	=	3,68
WC	1,230 *	2,070 *	1,000	=	2,55
Bad	3,190 *	2,910 *	1,000	=	9,28
Arbeiten	4,315 *	2,230 *	1,000		
	-0,250 *	1,195 *	1,000		
	-1,000 *	1,195 *	0,500	=	8,73
Kind 1	3,290 *	4,150 *	1,000		
	1,025 *	1,125 *	1,000		
	-0,250 *	4,150 *	1,000		
	-1,000 *	4,150 *	0,500	=	11,69
Kind 2	4,315 *	2,690 *	1,000		
	-0,250 *	1,700 *	1,000		
	-1,000 *	1,700 *	0,500	=	10,33
Schlafen	2,900 *	4,720 *	1,000		
	1,000 *	1,665 *	1,000		
	-0,250 *	1,030 *	1,000		
	-1,000 *	1,030 *	0,500	=	14,58
Loggia	3,760 *	3,410 *	0,500	=	6,41
Abst. Loggia	2,570 *	3,150 *	0,500		
	-0,250 *	3,150 *	0,500		
	-1,000 *	3,150 *	0,250	=	2,87
Summe WE 9 OG					132,82

WE 10 DG

Kochen/Wohnen	2,360 *	3,750 *	1,000		
	4,290 *	3,180 *	1,000		
	1,230 *	3,045 *	1,000		
	1,000 *	1,510 *	1,000		
	-0,950 *	0,670 *	0,500		
	-1,000 *	0,825 *	0,500		
	-0,250 *	0,825 *	1,000	=	26,81
Diele	3,060 *	1,790 *	1,000		
	1,250 *	0,465 *	1,000		
	3,520 *	1,390 *	1,000	=	10,95
Abst.	1,125 *	1,510 *	1,000	=	1,70
Bad	2,430 *	3,705 *	1,000		
	-0,500 *	0,250 *	1,000	=	8,88
Schlafen	2,900 *	4,590 *	1,000		
	0,865 *	1,705 *	1,000	=	14,79
Arbeiten	2,425 *	3,705 *	1,000		
	0,615 *	2,705 *	1,000		
	-1,000 *	1,000 *	0,500		
	-0,250 *	1,000 *	1,000	=	9,90
Loggia	2,200 *	3,490 *	0,500	=	3,84
Summe WE 10 DG					76,86

WE 11 DG

Kochen/Wohnen	1,890 *	3,275 *	1,000		
	5,050 *	3,645 *	1,000		
	3,015 *	0,125 *	1,000		
	0,050 *	2,345 *	0,500		
	-0,950 *	2,645 *	0,500	=	23,78
Abst.	2,385 *	1,090 *	1,000	=	2,60
HWR	2,650 *	1,480 *	1,000	=	3,92
Diele	1,200 *	4,900 *	1,000		
	0,250 *	3,010 *	1,000		
	2,930 *	1,350 *	1,000		
	1,715 *	0,535 *	1,000	=	11,51
Kind	5,015 *	2,220 *	1,000		
	-0,950 *	1,250 *	0,500		
	-0,050 *	0,920 *	0,500	=	10,52
Bad	2,290 *	3,095 *	1,000	=	7,09
Schlafen	2,900 *	5,020 *	1,000		
	-0,250 *	1,030 *	1,000		
	-1,000 *	1,030 *	0,500	=	13,79
Loggia	2,300 *	3,140 *	0,500	=	3,61
Summe WE 11 DG					76,80

Zusammenstellung

WE 1					57,92
WE 2					84,86
WE 3					79,58
WE 4					79,85
WE 5					57,92
WE 6					85,14
WE 7					79,58
WE 8					79,85
WE 9					132,82
WE 10					76,86
WE 11					76,80
<u>Summe</u>					<u>891,16</u>

3a Miteigentumsanteile

WE 1	57,915	=	65/1000
WE 2	84,858	=	95/1000
WE 3	79,580	=	89/1000
WE 4	79,846	=	90/1000
WE 5	57,915	=	65/1000
WE 6	85,136	=	95/1000
WE 7	79,580	=	89/1000
WE 8	79,846	=	90/1000
WE 9	132,815	=	150/1000
WE 10	76,862	=	86/1000
WE 11	76,804	=	86/1000
Summe	891,158		1000/1000

4	Nutzfläche		
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	<i>Länge (m)</i>	<i>Breite (m)</i>		<i>Fläche (m²)</i>
Keller				
Flur 1	2,320 *	1,230 *	1,000	
	4,710 *	1,735 *	1,000	
	1,230 *	1,475 *	1,000	= 12,84
Abst.	2,755 *	2,895 *	1,000	= 7,98
Keller WE 2	4,010 *	2,760 *	1,000	
	1,060 *	0,865 *	1,000	= 11,98
Keller WE 10	2,185 *	3,510 *	1,000	= 7,67
Keller WE 9-A	1,660 *	3,510 *	1,000	= 5,83
Keller WE 9-B	1,830 *	3,510 *	1,000	= 6,42
Keller WE 5	1,840 *	3,225 *	1,000	= 5,93
Keller WE 6	5,195 *	2,420 *	1,000	
	0,540 *	2,420 *	0,500	= 13,23
Flur 2	2,905 *	1,530 *	1,000	
	5,275 *	1,260 *	1,000	= 11,09
WA/TR	4,505 *	2,995 *	1,000	
	2,220 *	2,995 *	1,000	
	6,900 *	2,995 *	1,000	= 40,81
Keller WE 4	2,000 *	3,595 *	1,000	= 7,19
Heizung	2,905 *	4,945 *	1,000	= 14,37
Technik	1,385 *	1,070 *	1,000	= 1,48
Keller WE 7	2,000 *	3,595 *	1,000	= 7,19
Keller WE 3	1,685 *	3,595 *	1,000	
	1,685 *	1,260 *	1,000	= 8,18
Keller WE 8	2,000 *	3,595 *	1,000	= 7,19
Keller WE 11	2,000 *	3,595 *	1,000	= 7,19
Summe KG				176,56
Tiefgarage	25,320 *	11,710 *	1,000	
	-2,500 *	0,500 *	1,000	
	6,190 *	5,000 *	1,000	
	-0,300 *	0,600 *	4,000	
	-6,685 *	5,600 *	1,000	= 288,04
Abst./Müll	6,510 *	5,425 *	1,000	= 35,32

5 Rechnerischer Nachweis über die Höhe des Fußbodens des höchstgelegenen Aufenthaltsraumes über Geländeoberfläche

OK.- Terrain/ gewachsener Boden		m	0,00
OK.-EG-Fußboden		m	0,20
OK.-OG-Fußboden		m	2,90
OK.-DG-Fußboden		m	2,92
Summe		m	6,02

6 Berechnung der Grundflächenzahl GRZ/GFZ

	<i>Länge (m)</i>	<i>Breite (m)</i>		<i>Fläche (m²)</i>
Bebaute Fläche				
Wohnhaus				430,83
Tiefgarage ausserh.				174,51
Rampe				103,89
Zufahrt	6,500 *	8,100 *	1,000 =	52,65
Zufahrt	0,600 *	0,600 *	1,000 =	0,36
Eingang	2,240 *	0,835 *	1,000 =	1,87
Stellplätze	5,000 *	2,500 *	6,000 =	75,00
Stellplätze	5,000 *	2,750 *	3,000 =	41,25
Summe Bebaute Fläche				880,36
Grundstücksgröße				1179,00
GRZ 1	430,834 /	1179,000 =	0,365	< 0,40
GRZ 2	880,358 /	1102,000 =	0,799	< 0,80

7 Berechnung der Geschossigkeit

	<i>Länge (m)</i>	<i>Breite (m)</i>		<i>Fläche (m²)</i>
Bebaute Fläche				
Obergeschoß	10,790 *	17,750 *	2,000 * 1,000	
	3,040 *	15,720 *	1,000 * 1,000 =	430,83
DG in 2,30 m lichte	6,670 *	17,750 *	2,000 * 1,000	
	7,160 *	15,720 *	1,000 * 1,000	
	2,715 *	1,550 *	1,000 * 2,000	
	3,250 *	2,060 *	1,000 * 2,000 =	371,15
Verhältnis	371,147 /	430,834 =	0,86 >	0,75
Das Dachgeschoss ist somit nach § 2, Abs. 5 BauONW ein Vollgeschoss				

8	Berechnung der Stellplätze		
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		KFZ	Fahrräder
WE 1	57,915	1,500	1,500
WE 2	84,858	2,000	2,000
WE 3	79,580	1,500	1,500
WE 4	79,846	1,500	1,500
WE 5	57,915	1,500	1,500
WE 6	85,136	2,000	2,000
WE 7	79,580	1,500	1,500
WE 8	79,846	1,500	1,500
WE 9	132,815	2,000	2,000
WE 10	76,862	1,500	1,500
WE 11	76,804	1,500	1,500
Endsumme		18,000	18,000
Vorgesehen		19,000	19,000

9	Berechnung der Abstandsflächen		
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Traufe	0,10+2,90+2,92+1,01	*	0,400	=	2,780 >3,00
Traufe Ausbauten	0,10+2,90+2,92+1,01+2,15	*	0,400	=	3,640
Traufe Einsprung	0,10+2,90+2,92+4,01	*	0,400	=	3,980
Balkon DG	0,10+2,90+2,92+0,90	*	0,400	=	2,730
Giebel	0,10+2,90+2,92+1,01+5,395/3	*	0,400	=	3,500

10	Berechnung der Rohbaukosten		
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	<i>m³</i>	<i>Euro/m³</i>	<i>Euro</i>
Wohnhaus	5963,340 *	172,000	= 1025694,48
Rampe	367,060 *	101,000	= 37073,11
Tiefgarage/KG	1142,460 *	101,000	= 115388,46
			1025694,48

11	Berechnung der Herstellungskosten		
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	<i>m³</i>	<i>Euro/m³</i>	<i>Euro</i>
Wohnhaus	5963,000 *	600,000	= 3577800,00
Rampe	367,000 *	550,000	= 201850,00
Tiefgarage	1143,000 *	550,000	= 628650,00
Besondere Bauteile			= 113050,00
Kosten der Aussenanlage			= 70000,00
Baunebenkosten			= 90000,00
Summe			4681350,00