

Bianca Ratajczak
Technical University Munich

The storage of 'Doppelgarage' by Thomas Hirschhorn
Three-dimensional visualisation of the packing crates

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The Storage of Thomas Hirschhorns 'Doppelgarage'. Three-dimensional visualisation of the packing crates

A major part of the preparations for the dismantling and storage of Thomas Hirschhorn's 'Doppelgarage' was the three-dimensional visualisation of the storage room in which the packing crates were to be stored away in the most sensible and economical way. The confined storage space, the large number of packing crates and the long transport routes with only few opportunities of interim storage required precise planning. Three-dimensional visualisation made it possible to check in advance the logistical procedures of the operation and, as a result, avoid unnecessary moving around of the crates and the effects of any jolting associated with that. First, all the objects and parts that had to be packed up were measured up to determine the size of the packing crates. On the Excel table given below parameters such as the measurements of the crates and their external volume were registered. The last column indicates the order of sequence in which the packing crates were transported to the storage room and stacked away there.

Reihenflg. für Depot	#	Bezeichnung	Lichtes Maß			für Museumskarton		Außenmaß			Volumen m3	empty bestückt		Ver- packungs- reihenflg.
			Höhe cm	Tiefe cm	Breite cm	Volumen m3	Fläche m2	Höhe cm	Tiefe cm	Breite cm		Gewicht kg	Gewicht kg	
	01.	Wandteile	150,00	170,00	275,00	7,01	22,70	166,50	180,00	285,00	8,54	217,00	474,00	
	02.	16 Lampen + Kabel	98,00	128,00	98,00	1,23	6,94	113,80	138,00	108,00	1,70	69,00		
	03.	Goldenes Regal	186,00	53,00	130,00	1,28	8,19	189,50	63,00	140,00	1,67			15
	04.	CNW, Podest 2	147,00	136,00	224,00	4,48	16,68	162,00	146,00	234,00	5,53		194,00	9
	05.	UP, Podest 1	130,00	250,00	129,00	4,19	16,30	145,50	260,00	139,00	5,26		188,00	6
	06.	A, Podest 3	155,00	130,00	252,00	5,08	18,39	171,20	140,00	262,00	6,28		226,50	7
	07.	SF, Podest 4	112,00	130,00	260,00	3,79	15,50	128,80	140,00	270,00	4,87	158,50		8
	08.	8 Böcke CNW,UP,SF,A	115,00	85,00	80,00	0,78	5,16	131,00	95,00	90,00	1,12			18
	09.	Mauern 3,4,5	129,00	172,00	87,00	1,93	9,68	145,00	182,00	97,00	2,56			4
	10.	Mauern 10,11,12	129,00	170,00	78,00	1,71	9,05	145,00	180,00	88,00	2,30		95,50	2
	11.	Mauern 1,2,6,7,8,9	65,00	170,00	122,00	1,35	7,94	81,00	180,00	132,00	1,92			5
	12.	Baguette Teil 3	85,00	310,00	85,00	2,24	11,99	101,50	318,60	93,60	3,03			20
		Baguette Verbindungsteil 2												
	13.	Baguette Teil 2	85,00	330,00	85,00	2,38	12,67	104,00	338,50	93,60	3,30		151,00	19
		Baguette Verbindungsteil 1												
	14.	Baguette Teil 1	85,00	340,00	85,00	2,46	13,01	104,00	348,60	93,60	3,39		161,50	16
	15.	Baguette, 8 Böcke	77,00	45,00	77,00	0,27	2,57	92,70	53,50	85,50	0,42			21
	16.	Blaurotes Regal	210,00	27,00	255,00	1,45	13,22	225,00	35,60	263,60	2,11			13
	17.	Drogen	90,00	80,00	100,00	0,72	4,84	115,70	88,50	98,60	1,01		150,50	1
	18.	Wandbretter	187,00	11,00	60,00	0,12	2,79	190,50	20,00	68,60	0,26			17
	19.	Bildernest 1	198,00	97,00	75,00	1,44	8,27	213,00	105,70	83,50	1,88	74,50	86,00	12
	20.	Bildernest 2	242,00	150,00	84,00	3,05	13,85	257,00	159,00	93,00	3,80	115,00	127,50	14
	21.	Bildernest 3	242,00	136,00	85,00	2,80	13,01	257,00	146,00	93,50	3,51	111,00	123,50	11
	22.	Bildernest 4	214,00	130,00	80,00	2,23	11,07	229,00	138,70	88,60	2,81	87,00	104,50	10
	23.	Bücher und Magazine	60,00	95,00	55,00	0,31	2,85	75,50	103,60	63,60	0,50			3
	24.	Werkzeuge in Kiste (?) Fliegenfänger in K.1												
		Schw/G. Regal Inhalt in K.17 PVC-Rollen (auf Paletten)1 PVC-Rollen (auf Paletten)2												
		Summe				52,29	246,63				67,77			

Depotraum	360,00	390,00	860,00	120,74	33,54
Summe				120,74	33,54

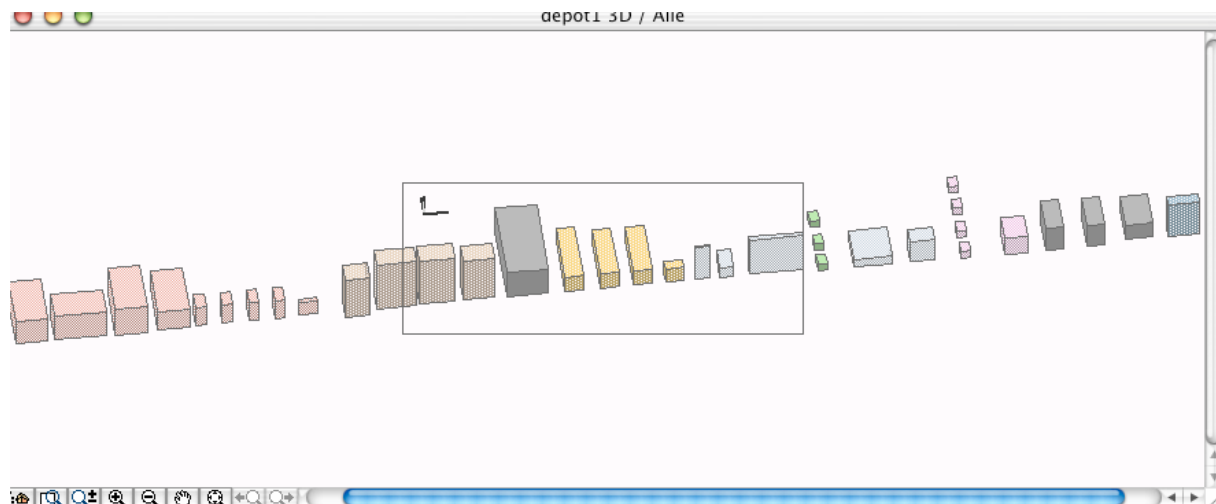
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Requirements for stacking

The crates needed to be arranged as economically as possible in the designated room and stacked up on top of each other. A distance of 30 cm to the wall was observed in order to avoid the creation of a micro-climate and to facilitate inspections of the outsides of the crates. The stacked up crates had to cover the surface of the boxes beneath them well and the weight evenly distributed.

Visualisation with the aid of the CAD programme ArchiCAD

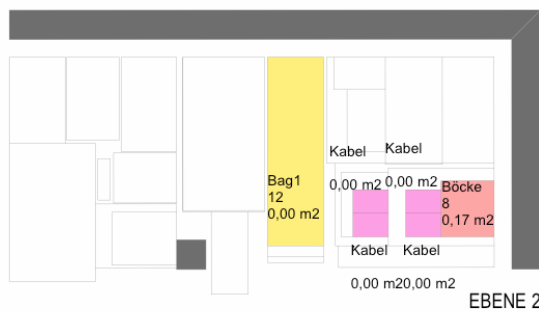
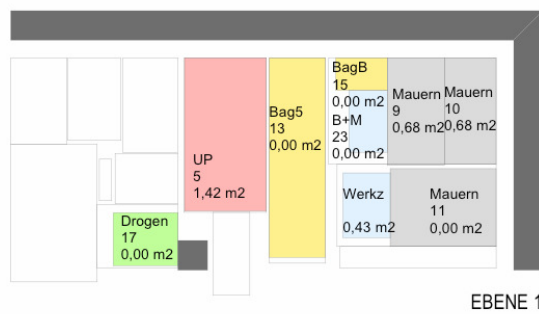
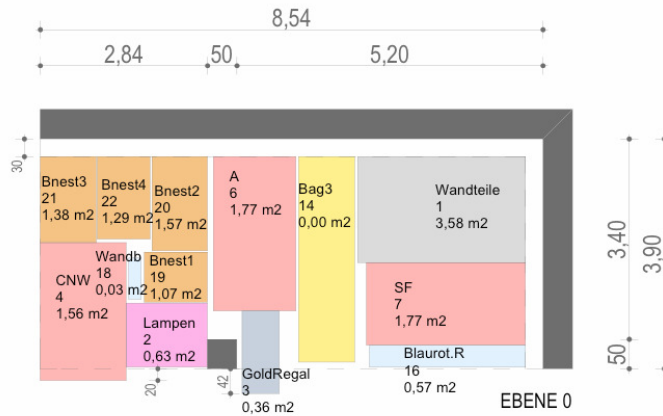
The measurements of the individual packing crates and those of the storage room were fed into the CAD programme ArchiCAD (CAD is an abbreviation for computer aided design). For visualisation purposes the crates were shown in different groupings of colour.



The crates lined up in a row.

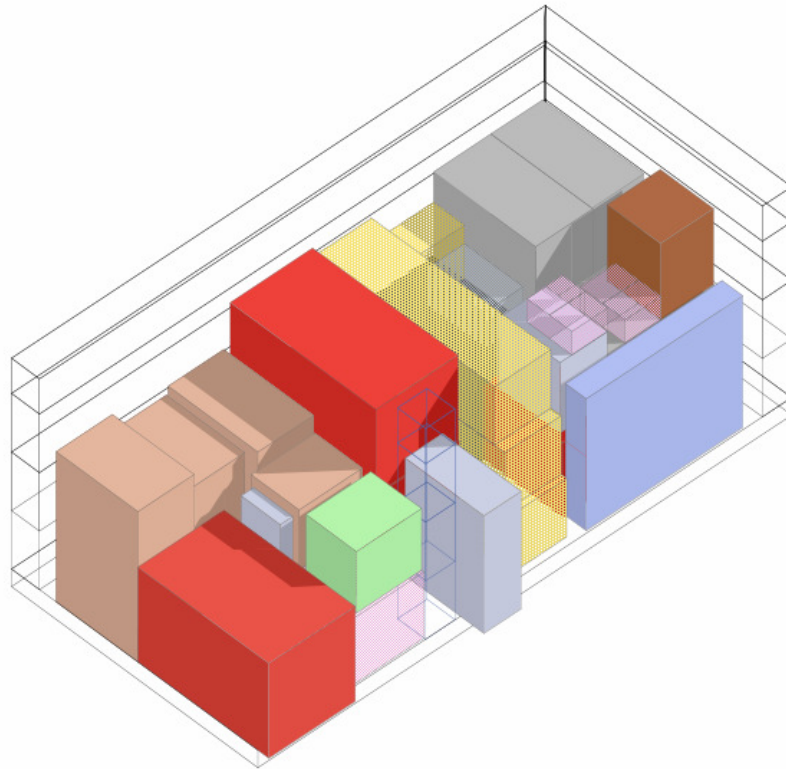
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With measurements of approximately 4 m x 8 m, the storage space amounts to an area of 32 m². Though its full height measures approximately 3,6 m, but this can only be used to a limited extent.



The illustrations show three levels that were used to stack the packing crates. The architectural features of the storage room in the form of the walls and a column are represented in the colour grey.

In this three-dimensional representation of the storage room the arrangement of the stored packing crates can be viewed from every angle.



An example of a view showing the three-dimensional representation.



The actual arrangement of the crates in the storage room.