



REFERENCE LIST

MULTI-STOREY CAR PARKS WITH FREELY SPANNED PARKING AISLES 1964 - 2016

The ceiling-constructions of the following projects are concrete haunch slabs developed by AMP for the construction of multi-storey car parks. They have a free span of 13 up to 17 meters to avoid columns between the parking places. The average consumption of concrete amounts only 230 liters per m².

No.	Project/ client	Construction period	No. of places	Car park type	Services AMP	Notes
1	UNDERGROUND CAR PARK Schloßplatz Karlsruhe Staatl. HBA	1964/65	980	2-storey Underground car park	Leader of design- consortium, layout, structural design, supervision	Up to 1.40 m earth cover, continu- ous haunch slabs, 2 up to 4 m below ground water level
2	UNDERGROUND CAR PARK N 6 in Mannheim	1965/66	360	3-storey underground car park with roof parking	Structural analysis	Continuous haunch slabs, 6 up to 8 m below ground water level
3	UNDERGROUND CAR PARK Kur- haus Baden-Baden Kurverwaltung	1965/66	300	1-storey underground car park	Structural analysis, su- pervision of the raw construction	Continuous haunch slabs, founda- tion slab 2.50 m below ground water level
4	CAR PARK Euro- pazenter Berlin	1966/67	1100	4-storey car park, Split-level-system	Structural analysis	Continuous haunch slabs in con- ventional formwork
5	CAR PARK Lam- pertshof Saarbrücken Parkhaus- Gesellschaft Saarbrücken	1966	550	Car Park with closed facade, ramped car park	Structural analysis	Continuous haunch slabs, After 36 years: ADAC-Recommendation 2002: „User-friendly car park“
6	UNDERGROUND CAR PARK Sa- linengelände Rosenheim Community of Rosenheim	1967	250	1-storey underground car park	Architectural and structu- ral design	Skeleton structure with haunch beams
7	CAR PARK Auto Pachter Schwabing München	1968/69	400	Car Park with closed facade Split-level-system	Car park consulting, Structural analysis	First time: Separated haunch slabs, slab tables in cyclic work
8	CAR PARK Kör- nerstraße Hagen BP-Hamburg	1968/69	340	Open Car park, Split- level-system	Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL Fixed frames, separated haunch slabs, conventional formwork

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9	UNDERGROUND CAR PARK Krank- enhaus Lahr Community of Lahr	1969	55	1-storey underground car park	Structural analysis	Continuous houch slabs
10	Parkdeck Krankenhaus Lahr Community of Lahr	1969/70	160	1-storey open car park	Structural analysis	Seperated houch slabs
11	CAR PARK Ham- burgerstr. Hamburg BP-Hamburg	1969/70	2040	Open Car park with up- and down-spindle ramps	Architectural design, Structural analysis, Supervision	Seperated houch slab in cyclic work, max. weekly achievement: 2'400 m2 of slab
12	UNDERGROUND CAR PARK Kö- nigswei Tilburg BP Holland	1969/70	400	1-storey Underground car park	Car park consulting, Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL 5 lanes (80 m) in span direction, jointless construction, seperated houch slabs, "watertight concrete construction" (ground water level 1.70 m above foundation level)
13	UNDERGROUND CAR PARK Marktplatz Bonn Community of Bonn	1969/70	340	3-storey Underground car park	Architectural design, Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL Covered construction method, Top ceiling: continuous houch slab, intermediate ceilings: seperated houch slabs
14	CAR PARK BP- Hauptverwaltung City Nord Hamburg	1970	650	Open Car park with full-storey ramps	Car park consulting, Structural analysis, Supervision	Seperated houch slab in Cyclic work
15	UNDERGROUND CAR PARK Esso- Motel München	1969/70	96	2-storey Underground car park	Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL Seperated Houch slab
16	UNDERGROUND CAR PARK Stollschule Rosenheim Community of Rosenheim	1970	60	1-storey Underground car park	Architectural design, Structural analysis	Seperated Houch slab
17	UNDERGROUND CAR PARK Rot- teckring Freiburg Community of Freiburg	1969/70	400	4-storey Underground car park with counter- rotating spindle	Architectural design, Structural analysis, Supervision	SUCCESSFUL CONTRACTORS PROPOSAL Ceiling above 2 nd floor as shuttered lid (seperated houch slab). Partial- ly superstructure (department store)
18	CAR PARK Oc- camstraße München	1970/71	315	2-storeys car park with closed facade	Architectural design, Structural analysis, Supervision	SUCCESSFUL CONTRACTORS PROPOSAL Seperated houch slab in cyclic work, sports field on surface
19	CAR PARK Gub- belstraat Maastricht Holland	1971/72	420	Multi-storey open car park with ramped floors	Car park consulting, Structural analysis	Cyclic work, foundation partially through a wine-vault
20	Car park in Amsterdam	1971/72	300	Multi-storey open car park, split-level ramps	Car park consulting, Structural analysis	Cyclic work

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21	CAR PARK Dach- auplatz Regensburg Community of Regensburg	1971/72	720	Multi-storey car park with closed facade, ramped floors	Architectural design, Structural analysis, Supervision	Cyclic work, built over a 60 m long roman wall.
22	Park- und Büro- haus Opel Häusler München	1972/73	390	Multi-storey car park with closed facade with offices and spindle ramps	Car park consulting, Structural analysis	Cyclic work
23	SG Hemmingen Schauckert-Nord Solidbau	1973	72	1-storey underground car park	Architectural design, Structural analysis	
24	SG Frankfurt Sossenheim "A" Neue Heimat Hes- sen	1973	200	2-storey Quarter car park	Architectural design, Structural analysis	Cyclic work
25	SG Frankfurt Sossenheim "C" Neue Heimat Hes- sen	1973	66	1-storey Quarter car park	Architectural design, Structural analysis	Cyclic work
26	UNDERGROUND CAR PARK Mensa Mannheim Staatl. HBA	1973/74	700	2-storey Underground car park	Architectural design, Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL For the first time: cyclic work in stripes
27	CAR PARK Luit- poldstraße Aschaffenburg Rhein-Main-Park- garagen	1973/74	406	6-storey parking- and commercial building, ramped floors	Architectural design, Structural analysis, Supervision	Multi-purpose building, Cyclic work, for the first time: double columns
28	UNDERGROUND CAR PARK LVA Karlsruhe	1973/74	500	3-storey Underground car park, full-storey ramps	Car park consulting, Structural analysis	Cyclic work in stripes, high utilisa- tion of formwork, "watertight con- crete construction"
29	UNDERGROUND CAR PARK Thea- ter Karlsruhe Staatl. HBA	1974/75	416	2-storey Underground car park with direct entry	Architectural design in consortium with Architect Bätzner, Structural analysis, Supervision	ADAC RECOMMENDATION 2000 Streifentaktverfahren, 2.40 m under ground water level, "watertight concrete construction"
30	SG Hemmingen Hochstetter Pfad Solidbau	1975	64	1-storey underground quarter car park	Architectural design, Structural analysis	
31	SG Frankfurt Sossenheim "B" Neue Heimat Hes- sen	1975	73	1-storey quarter car park	Architectural design, Structural analysis	Cyclic work
32	UNDERGROUND CAR PARK Fried- richsplatz Karlsruhe Hurre- Projek Underground car parkgruppe	1975/76	422	2-storey underground car park with direct floor access	Architectural design, Structural analysis, Supervision	Weinbrenner Medal 1981 Cyclic work in stripes, 1.80 m under ground water level, "watertight concrete construction"
33	Parkpalette Krankenhaus Worms Community of Worms	1975/76	680	2-3-storey open car park, Split-level ramps	Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Cyclic work, raw construction costs 2'900,- DM/pl.

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34	UNDERGROUND CAR PARK Frie- drichstraße Worms Community of Worms	1976	154	2-storey Underground car park with ramped floors	Traffic design, car park consulting, Structural analysis	Cyclic work in stripes
35	CAR PARK-Köln- Chorweiler Neue Heimat	1976	1400	3-4-storey open car park, Spindle ramps	Car park consulting, Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL Cyclic work in stripes, high utilisation of formwork
36	UNDERGROUND CAR PARK Mark- platz Ettlingen IBG Düsseldorf	1976	412	2-storey underground car park with semicir- cle-spindle and full- storey ramps	Architectural design, Structural analysis, Supervision	Cyclic work in stripes, Old Town Restoration, 6 different superstruc- tures
37	CAR PARK Land- ratsamt Heilbronn Landratsamt	1976/77 1987/88	300 96	4 up to 5-storey open car park	Architectural design, Structural analysis	Cyclic work in stripes, high utilisation of formwork, heightening with the same system
38	CAR PARK Kran- kenhaus Ludwigsburg LDR Ludwigsburg	1976	402	3 up to 4-storey car park with closed facade and ramped floors	Architectural design, Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL Cyclic work in stripes
39	CAR PARK Thea- ter Wiesbaden HBA Wiesbaden	1976/77	400	Ramped car park with a slope of 5%	Car park consulting, traffic design, Structural analysis	Curved floor plan, adapted to the course of the street, glazed facade, cyclic work in stripes
40	Wohn-, Park- und Geschäftshaus Karlsruhe Community of Karlsruhe	1976/77	691	Ramped car park with a slope of 5%	Architectural design, Structural analysis, Supervision	Weinbrenner Medal 1981 Car park in connection with a re- fuse central, office building and apartments, adaption of creep- deformation with hydraulic jacks, cyclic work in stripes, "watertight concrete construction"
41	CAR PARK Thea- ter am Ring Villingen CAR PARK Schwaben GmbH	1977	362	2 up to 3-storey open split-level car park	Architectural design, Structural analysis, Supervision	Cyclic work in stripes, high utilisation of formwork
42	UNDERGROUND CAR PARK am Theater Biberach Community of Biberach	1977/78	436	3-storey underground car park	Architectural design, Structural analysis	Cyclic work in stripes, partially covered construction method, permanent sole depression (ground water level 7 m above sole)
43	CAR PARK Eppsteinerstr. Oberursel Community of Oberursel	1978/79	290	4 up to 5-storeys ramped car park with closed facade	Architectural design, Structural analysis	Very small plot of only 30 x 36 m, in redevelopment area, mechanical smoke disposal
44	UNDERGROUND CAR PARK Mur- gufer Gaggenau Community of Gaggenau	1978/79	361	1-storey Underground car park with 4 park- ing lanes	Architectural design, Structural analysis, Supervision	6'000 m2 visible parking area, "watertight concrete construction", reduction of uplift with limiting drainage

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45	CAR PARK Clichystraße Heidenheim Parkhaus Schwa- ben GmbH	1979	379	4 up to 5-storey open ramped car park	Traffic design Structural analysis, Architect: Arch. Oesterle	ADAC RECOMMENDATION 1993 „User-friendly car park” Staggered floors, cyclic work
46	CAR PARK Euro- pastraße Nürtingen Parkhaus Schwa- ben GmbH	1978/79	473	5 up to 6-storey open ramped car park	Architectural design, Structural analysis, Supervision	ADAC RECOMMENDATION 1991 „User-friendly car park” Optimal cyclic work, department store in the basement
47	UNDERGROUND CAR PARK Salz- stadel Ulm Ulmer Park- betriebsgesell- schaft	1978/79	540	4-storey underground car park, full-storey ramps	Architectural design in consortium with Architect Hochstrasser, Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL Covered construction method with girder grillage for 4 up to 5-storey superstructure, permanent sole depression (ground water level 4 m above sole)
48	UNDERGROUND CAR PARK Bis- marckplatz Regensburg Community of Regensburg	1979/81	384	3-storey Underground car park, floor access with 2 semicircle- spindle ramps	Architectural design, Structural analysis, Supervision	SUCCESSFUL CONTRACTORS PROPOSAL Covered construction method, "Watertight concrete construction", permanent sole depression (ground water level 8 m above sole)
49	CAR PARK Insel- hof Villingen Parkhaus Schwa- ben GmbH	1979	352	2-storey split-level car park	Architectural design, Structural analysis, Supervision	Optimal cyclic work
50	UNDERGROUND CAR PARK Fest- platz I Karlsruhe Bauherrenconsorti- um Hurrle	1979/80	519	2-storey underground car park with civil protection shelter	Architectural design, Structural analysis	Civil protection shelter combined with column-free underground car park, "watertight concrete construc- tion"
51	CAR PARK Schloßbergring Freiburg Freiburger Kom- munalbauten	1977/79	472	5-storey ramped car park with down- spindle, 2 entries, 2 exits	Traffic design, Structural analysis in consortium	ADAC RECOMMENDATION 1987 „User-friendly car park” 2-storey row houses on top
52	CAR PARK Kran- kenhaus Bamberg Community of Bamberg	1978	400	3-storey open car park	Structural analysis	SUCCESSFUL CONTRACTORS PROPOSAL Top ceiling partially opened, plant- ing vegetation on the roof (1.7 kN/m ²)
53	Parkpalette Maxenbuck Engen Community of Engen	1979	119	1 up to 2-storey open car park	Car park consulting, Structural analysis	1-storey car park in adapted to the city wall, protection of the city wall
54	CAR PARK Gra- benstraße Backnang Parkhaus Schwa- ben GmbH	1979	390	6-storey car park , parking ramp	Architectural design in consortium with Architect Findling, Structural analysis	ADAC RECOMMENDATION 1991 „User-friendly car park” Optimal cyclic work, 2-hinge frames

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55	Underground car park für das Bischöfliche Ordinariat Freiburg	1979	73	3-storey underground car park	Structural analysis in consortium	Additional parking places on displaceable pallets
56	UNDERGROUND CAR PARK Tübingen Tor Reutlingen Community of Reutlingen	1979/80	194	2-storey underground car park	Architectural design, Structural analysis	"Watertight concrete construction", uplift-protection with permanent anchors (sole depression possible)
57	UNDERGROUND CAR PARK Moltkeareal Stuttgart Parkhaus Schwaben GmbH	1979/80	265	2-storey underground car park	Architectural design, Structural analysis, Supervision	Underground car park with a sports field and a playground on surface
58	UNDERGROUND CAR PARK Nägelsbachstr. Erlangen Bauherrngem.	1980	247	2-storey Underground car park	Structural layout, traffic design, car park consulting	Domestic and commercial superstructure, uplift-protection with a heavy-weight slab
59	2 Underground car parks in Santiago de Chile	1980/81	1100	2-storey Underground car park	Structural layout, traffic design, car park consulting	Horizontal floors with spindle-ramps
60	UNDERGROUND CAR PARK Festplatz II Karlsruhe Bauherrengem.	1980	442	2-storey Underground car park with Civil protection shelter	Architectural design, Structural analysis	Civil protection shelter combined with column-free underground car park, "watertight concrete construction"
61	UNDERGROUND CAR PARK Krankenhaus Waldkirch	1981	126	2-storey Underground car park	Traffic design, Structural design	In correlation with a hospital expansion, green roof
62	UNDERGROUND CAR PARK Krankenhaus Bietigheim-Bissingen Municipal hospital	1981	134	2-storey Underground car park, Split-level-system	Architectural design, Structural design, Supervision	Civil protection shelter, free span 15 m, helicopter landing site on the top ceiling
63	CAR PARK Muslen Villingen-Schwenningen	1981/82	417	6 up to 7-storey open car park, Split-level-system	Traffic design, Structural analysis	Cyclic work in stripes, steel-roof
64	CAR PARK Löhergraben Aschaffenburg Community of Aschaffenburg	1981/82	378	Ramped car park, 2-lanes, 4-storeys	Architectural design, Structural design, Supervision	Side-hill protection with nailing, 2-hinge frames
65	UNDERGROUND CAR PARK Süd-West-Funk Baden-Baden	1982	396	3-storey Underground car park, Split-level-system	Structural layout, car park consulting	Sloping location, green roof, vertical rock anchors in alliance with ramp walls for bracing
66	UNDERGROUND CAR PARK Marktplatz Leimen Community of Leimen	1982/83	120	2-storey downtown underground car park	Architectural design, Structural design,	SUCCESSFUL CONTRACTORS PROPOSAL Civil protection shelter

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67	Car park VEW-Münster	1982/83	350	3-storey Rotunda with internal ramp	Structural design, car park consulting	Trapezoidal 2-hinge frames, "water- tight concrete construction"
68	UNDERGROUND CAR PARK Lieder- halle Stuttgart Erweiterung	1981/83	220	2-storey Underground car park	Structural design, Archi- tectural design in consor- tium with Architect Gut- brod	Direct access to both floors
69	UNDERGROUND CAR PARK Klos- tergarten Immenstadt Community of Immenstadt	1983/84	206	2-storey Underground car park	Architectural design, Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Civil protection shelter, "watertight concrete construction", superstruc- ture (subsequent integration of columns 1986/87), load adaptation with hydraulic jacks
70	UNDERGROUND CAR PARK Bun- despostministerium Bonn	1983/84	450	3-storey Underground car park	Structural design, car park consulting	Access with two 2-lane spindles, civil protection shelter
71	UNDERGROUND CAR PARK Bun- desverkehrs- ministerium Bonn Bundesbaudirektion	1983/84	550	Central building: 3- storeys, neighbour car park: 2-storeys	Architectural design and Structural design for the central building, car park consulting for the neighbour car park	Common access with No. 70, central building symmetric to No. 70
72	Parkdeck Bad Soden	1983	78	Underground car park with roof parking	Architectural design, Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Cyclic work in stripes
73	UNDERGROUND CAR PARK Lui- senplatz Wiesbaden Community of Wiesbaden	1983/84	311	2-storey Underground car park with direct floor access	Architectural design, Structural design	ADAC RECOMMENDATION 1987 „User-friendly car park“ Cyclic work in stripes, "watertight concrete construction"
74	UNDERGROUND CAR PARK Schloßgarten Waldshut-Tiengen Community of Waldshut	1983/84	129	2-storey Underground car park, 2 semicir- cle-spindles	Architectural design and structural design in con- sortium	Cyclic work in stripes
75	UNDERGROUND CAR PARK Kai- serallee 11, Karls- ruhe	1984	285	1/2 ground floor and 2 underground floors, counter-rotating spindle ramp	Architectural design in consortium, Structural design	Civil protection shelter, partially 6- storey superstructure
76	UNDERGROUND CAR PARK Müh- leninsel Landshut	1983/84	303	4-storey Underground car park, 2 concentric semicircle-spindles	Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Uplift-protection with permanent anchors, "watertight concrete con- struction", 9 m ground water pres- sure
77	Car park in Utrecht Holland	1984	327	8 up to 9-storey ramped car park	Architectural design and structural design in con- sortium	Very small plot (31.20 x 35.70 m), 9 floors, pile foundation,
78	Car park Heerlen Geleenstraat Holland	1984/85	398	Ramped car park	Architectural design and structural design in con- sortium	Pile foundation, retail area in the ground floor

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79	CAR PARK Kornhausplatz Waldshut Community of Waldshut	1985/86	400	4 up to 5-storey open ramped car park	Architectural design and structural design in con- sortium	ADAC RECOMMENDATION 1987 „User-friendly car park” 2-hinge frames, steel roof
80	UNDERGROUND CAR PARK Rossgasse Lahr	1985	43	1-storey underground car park	Architectural design and structural design in con- sortium	Underground car park in very close downtown location for long-term parking, " watertight concrete con- struction "
81	Parkpalette Mannheim Ludwig-Frank- Kaserne Staatl. HBA	1985	350	2-storey open car park	Architectural design, Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Row of "plant pillars" Concrete pergola
82	UNDERGROUND CAR PARK Cara- calla-Therme Baden-Baden Staatl. HBA	1985	210	1-storey Underground car park	Structural design, Car park consulting, Supervision	Rotenbachverdolung below the foundation slab, " watertight con- crete construction " partially superstructure
83	Parkdeck Bildungszentrum Heilbronn Landratsamt HN	1985/86	214	2-storey open car park	Architectural design, Structural design	Transverse slope of the deepest floor: 6,2 %
84	UNDERGROUND CAR PARK Schweinemarkt- platz Crailsheim Community of Crailsheim	1985/87	150	2-storey Underground car park	Car park consulting, Structural design Supervision	SUCCESSFUL CONTRACTORS PROPOSAL Covered construction method, partially superstructure, permanent sole depression
85	CAR PARK Lud- wigsplatz Karlsruhe	1985/87	296	5-storey Car park, Split-level-system	Traffic design, Structural design	Superstructure and enclosure at 3 sides for 67 apartments und 11 shops
86	CAR PARK Bahn- hofstraße Kornwestheim Community of Kornwestheim	1986	273	5-storey parking ramp with entry- spindle	Architectural design and structural design in con- sortium	ADAC RECOMMENDATION 1987 „User-friendly car park” Side-hill protection, underpassing of a street, 2-hinche frames, per- manent drainage of layer water
87	UNDERGROUND CAR PARK Kur- hausvorplatz Freu- denstadt Community of Freudenstadt	1986/88	223	3-storey underground car park	Architectural design, Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Superstructure
88	UNDERGROUND CAR PARK Bür- gerzentrum Ahrwei- ler Community of Bad Neuenahr-Ahrweiler	1986/88	192	2-storey underground car park	<u>General Planning:</u> Architectural design, Structural layout, House services design	ADAC RECOMMENDATION 1990 „User-friendly car park” Covered construction method, superstructure
89	Alleegarage Weiden	1986/88	400	2-storey underground car park, 334 m long	Car park consulting, Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Covered construction method, "watertight concrete construction", 168 m long without any joints

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90	UNDERGROUND CAR PARK Vieh- marktplatz Biberach Community of Biberach	1986/88	313	2-storey underground car park	Architectural design, Structural design	ADAC RECOMMENDATION 1991 „User-friendly car park” Undercrossing of the historical Viehmarkt-building, "watertight concrete construction", pit protec- tion with diaphragm wall and grouted sealing blanket
91	UNDERGROUND CAR PARK Ma- rienplatz Ravens- burg Community of Ravensburg	1987/89	408	4-storey underground car park	Traffic design, Structural layout	Covered construction method with two lids und a street, streetwidth ≤ 23 m, "watertight concrete con- struction, jointless construction
92	UNDERGROUND CAR PARK Kraut- markt Kirchheim Community of Kirchheim	1987/88	250	3-storey underground car park	Car park consulting, traffic design, Structural layout	Covered construction method, superstructure, permanent sole depression
93	CAR PARK Buch- hornplatz Ost Friedrichshafen	1987/88	625	4 floors below + above a department store floor access with 2-lane spindle ramp	Car park consulting, traffic design, structural design	ADAC RECOMMENDATION 1994 „User-friendly car park” Axis distance: 7,50 m (3 places), anchored deep diaphragm wall down to natural waterproofing layers becoming exterior wall
94	UNDERGROUND CAR PARK Orts- mitte Mühlacker Community of Mühlacker	1987/89	408	3-storey Underground car park	Car park consulting, traffic design, structural design in con- sortium	Covered construction method, superstructure, permanent sole depression, access directly to 2 nd underground floor and additionally with a spindle ramp
95	CAR PARK Pauli- nenstraße Heidenheim Community of Heidenheim	1987/88	225	3-storey open car park above a railway track, counter- rotating central spin- dle ramp	Architectural design, structural design	Pile foundation with pile head bracing-grillage (no foundation slab)
96	UNDERGROUND CAR PARK Markt- platz Freudenstadt Community of Freudenstadt	1987/88	425	2-storey underground car park	Architectural design, structural design	ADAC RECOMMENDATION 1992 „User-friendly car park” Underpassing of an inner-city highway with a tunnel
97	UNDERGROUND CAR PARK Dammstraße Düs- seldorf Phillip Holzmann Projektentwicklung	1987/89	952	3½-floor underground car park, floor access by 2-lane spindle ramp	Architectural design, structural layout	Top ceiling 4 up to 7 m below ground surface and 2 up to 5 m below highest ground water level, maximum ground water pressure: 13.5 m, 5-storey superstructure, uplift-protection with permanent anchors
98	CAR PARK Schiedgraben Schwäbisch Hall	1988/89	224	6-storey ramped car park with additional internal ramps	<u>General Planning:</u> Architectural design, Structural design, House services design	ADAC RECOMMENDATION 1997 „User-friendly car park” Side-hill protection with a pile-wall with 6 layers of permanent anchors, all parking floors are staggered, adapted to the natural slope of the location
99	CAR PARK Schu- macher'sche Fab- rik Bietigheim-Bissin- gen	1988	118	2 up to 3-storey split- level car park with 2- way-ramps	Car park consulting, structural design in con- sortium	Roof with trussed girders of steel
100	UNDERGROUND CAR PARK Ken- edyplatz Essen Parken in Essen	1988/89	494	2-storey underground car park	Traffic design, Car park consulting, Structural layout	ADAC RECOMMENDATION 1991 „User-friendly car park” Axis distance: 7,50 m (3 places) Floor area = fire compartment

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101	UNDERGROUND CAR PARK Klos- tergraben Neckarsulm	1988	96	1-storey underground car park	Traffic design, Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Covered construction method, city wall protection of more than 100 m length
102	UNDERGROUND CAR PARK Schul- berg Wiesbaden Städt. Ges.	1988/89	221	3-storey underground car park	Architectural design, Structural design in consortium	Straight ramps from the street to all floors and internal floor access with a semicircle-spindle
103	UNDERGROUND CAR PARK Jahn- platz Bad Schwal- bach	1988/89	204	2-storey underground car park , Split-level- system	Architectural design, Structural design	ADAC RECOMMENDATION 1989 „User-friendly car park” "Watertight concrete construction", partially superstructure
104	UNDERGROUND CAR PARK Erwei- terung Kurhaus Baden-Baden	1988/89	142	1-storey underground car park	Structural design, Supervision	Expansion of No. 3, foundation slab as "watertight concrete construc- tion"
105	UNDERGROUND CAR PARK Kran- kenhaus Weiden	1989/90	400	3-storey car park with full-storey ramps	Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Covered construction method, "watertight concrete construction" civil protection shelter, uplift- protection with permanent anchors
106	UNDERGROUND CAR PARK VEW- Bezirksdirektion Arnsberg VEW	1989/90	303	3-storey underground car park with roof parking	Architectural design, Structural design	Pile wall becoming exterior wall of the two deepest floors, ground water pressure: 3-storey atrium with vegetation zone, only 1 fire com- partment, mechanical ventilation only for fresh air
107	CAR PARK Am Bahnhof Heiden- heim 2.BA Community of Heidenheim	1989/90	90	3 floors above a storage hall, increase of the 1 st construc- tion stage (No.94)	Architectural design, Structural design	Pile foundation with pile head bracing-grillage (no foundation slab)
108	UNDERGROUND CAR PARK Berli- ner Platz Kronberg Community of Kronberg	1989/91	280	3-storey Underground car park	Traffic design, Structural design in consortium	ADAC RECOMMENDATION 1996 „User-friendly car park” Seperated hounch slabs, cyclic work, sole drainage
109	CAR PARK Pfalz- grafenstr. Worms	1989/90	82	3-storey open car park with splitted entries	Architectural design, Structural design	Roof with trussed girders of steel
110	UNDERGROUND CAR PARK Lan- derer Areal with reconstruction of Horten CAR PARK in Heilbronn	1989/91	405	2-storey Underground car park linked with the HORTEN car park	Architectural design, Structural design	Superstructure (load 9,5 Mp/m2), limiting drainage, "watertight con- crete construction"
111	UNDERGROUND CAR PARK Nürtin- gerstr/Silcherstr. Metzingen	1989/91	72	1-storey, 2-lane underground car park	Architectural design, Structural layout	"Watertight concrete construction", superstructure
112	Parkdeck Simmern	1990/91	134	2-storey, 2-lane Underground car park, Split-level- system	Architectural design, Structural design in consortium	"Watertight concrete construction"

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113	CAR PARK Drei Mohren Augsburg	1990/91	77	2-storey open car park	Structural design	Separated houch slabs, covered parking places on the top ceiling
114	UNDERGROUND CAR PARK Deut- scher Bundestag Bonn	1990/91	402	2-storey Underground car park, direct floor access	Architectural design, Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Pit protection with a deep dia- phragm wall down to natural water- proof layers, ground water pres- sure: 5,35 m, "watertight concrete construction"
115	CAR PARK EWR Rathenaustraße Worms	1991/92	172	2-3-storey, 2-lane car park, Spindle ramp	Structural design, Car park consulting	Subsequent heightening of the 3- storey area up to 4 floors took into account
116	UNDERGROUND CAR PARK Stadt- werke Rastatt Stadtwerke Rastatt	1990/91	170	2-storey, 2-lane Underground car park,	Traffic design, Structural layout	Covered construction method, pit protection with diaphragm wall and grouted sealing blanket, "watertight concrete construction"
117	UNDERGROUND CAR PARK Thea- tervorplatz Chemnitz Community of Chemnitz	1991/92	348	2-storey underground car park, direct floor access	Architectural design, Structural design	ADAC RECOMMENDATION 1995 „User-friendly car park“ Anchored pile wall becoming exter- ior wall of the car park, top ceiling fixed in pile wall, permanent sole depression
118	CAR PARK Kauf- haus Schneider Rastatt	1991/92	320	Ramped car park	Architectural design, Structural design	Separated houch slabs, cyclic work
119	UNDERGROUND CAR PARK Zentra- ler Omnibusbahn- hof Freiburg Freiburger Kom- munalbau	1991/93	272	3-storey underground car park, linked with the KTS-car park 2 semicircle-spindles	Architectural design, Structural design in consortium	EUROPEAN PARKING AWARD 1994 ADAC RECOMMENDATION 1999 „User-friendly car park“; Covered construction method, below the central bus station, close to the ICE-track
120	Maindammgarage Klingenberg	1992	85	1-storey, 1-lane open car park	Architectural design, Structural design	Sole depression, fixed pile wall becoming exterior wall on the riverside.
121	CAR PARK Markt Wiesbaden Bilfinger Berger Parking	1992/93	600	2-storey Underground car park	Architectural design, Structural design	ADAC RECOMMENDATION 1994 „User-friendly car park“; Finalist of the European Parking Award '94 Possibility of superstructure took into account, limiting drainage, "watertight concrete construction"
122	UNDERGROUND CAR PARK Gerhart-Haupt- mann-Ring Frank- furt	1993	44	1-storey, 1-lane underground car park	Architectural design, Structural design	Separated houch slabs, continu- ous houch slabs, imposed load: SLW 30 tons
123	UNDERGROUND CAR PARK Och- senareal Neuhaus- en	1992/93	95	1-storey, 2-lane underground car park	Architectural design in consortium, Structural design	Cyclic work, floor plan adapted to the landscape design
124	UNDERGROUND CAR PARK Erwei- terung Rattenfän- gerhalle Hameln	1993/94	118	1-storey, 2-lane underground car park increase of construc- tion stage 1	Architectural design and structural design in con- sortium	1 lane straight, 1 lane curved, that way a central „deep garden“ was created (rise of the arch: 7.23 m, length: 84.30 m) above a water- proof foundation slab

No.	Project/ client	Construction period	No. of places	Car park type	Services AMP	Notes
125	UNDERGROUND CAR PARK Vieh- markplatz Waldshut	1993/94	563	3-storey, 3-lane underground car park 2 semicircle-spindles	Traffic design, Car park consulting, Structural layout	ADAC RECOMMENDATION 1998 „user-friendly car park“ Top ceiling partially used as transfer structure for some 4-storey buildings
126	UNDERGROUND CAR PARK Schloßpark Badenweiler	1993/95	216	2½-storey, 2-lane underground car park, 2 semicircle- spindles	<u>General Planning:</u> Architectural design, Structural design, House services design	Covered construction method (cheaper than an open excavation), "watertight concrete construction"
127	UNDERGROUND CAR PARK Oberer Stadtplatz Deggendorf	1995/96	203	3-storey, 1-lane underground car park 2 semicircle-spindles	Architectural design, Structural design	Covered construction method "watertight concrete construction", permanent sole depression
128	UNDERGROUND CAR PARK Et- tlinger Str. Karls- ruhe	1995/96	340	2-storey, 3-lane underground car park, direct exit out of 1. + 2. floor, 1 semi- circle-spindle, civil protection shelter	Traffic design, Structural design	Partially superstructure, "watertight concrete construction", civil protec- tion shelter
129	UNDERGROUND CAR PARK IWKA- Gelände Karlsruhe	1995/96	501	1-storey, 2-lane underground car park, direct floor access with a straight ramp	Structural design	SUCCESSFUL CONTRACTORS PROPOSAL (Construction cost: 7'000 DM/pl., high-class surface: 3'200 DM/pl.): landscape design with trees; natu- ral air circulation because of plant- ed light ditches
130	UNDERGROUND CAR PARK IWKA- Areal Karlsruhe 2. Bauabschnitt	1996	115	1-storey, 2-lane underground car park, 2 nd construction stage (No. 129)	Structural design	Neighbour car park of No. 128, sideways closed
131	UNDERGROUND CAR PARK City- Parkhaus Ober- ursel Bilfinger Berger Parking	1996/98	336	3-storey, 4-lane underground car park, Split-level-system	<u>General Planning:</u> Architectural design, Structural design, House services design	Finalist of the European Parking Award '99 Partially 4 ½-storey superstructure, "watertight concrete construction"
132	UNDERGROUND CAR PARK Gottesacker Tor Bretten	1996/98	160	3 1/2-storey under- ground car park, Split-level-system	Traffic design, Structural design	Partially superstructure
133	Pardeck Neue Allee Kirchheimbolanden Community of Kirchheimbolanden	1997/98	232	3-storey, 2-lane open car park, Split-level- system	Traffic consulting, Structural design, Design of the house services	6 m high side-hill protection with pile wall, open car park because of 1.5 m wide louvres down to the foundation slab
134	CAR PARK Elisa- beth-Krankenhaus Essen Parken in Essen	1998/99	402	3 up to 4-storey open ramped car park	<u>General Planning:</u> Architectural design, Structural design, House services design	Timber façade, complete construc- tion cost: 14'000 DM/pl.
135	City-Car park Trier	1999	950	3 underground floors 4 aboveground floors + Retail-area in the ground floor, spindle- ramps	Architectural design in consortium Structural design	Car park access from 2 streets

No.	Project/ client	Construction period	No. of places	Car park type	Services AMP	Notes
136	UNDERGROUND CAR PARK Post- galerie/ Stephan- platz Karlsruhe	1999/ 2000	325	3-storey, 2-lane underground car park, 2 semicircle-spindles	<u>General Planning:</u> Architectural design, Structural design, House services design	Pit protection with grouted sealing blanket and sheet pile wall, uplift- protection with permanent anchors, "watertight concrete construction"
137	CAR PARK Lise- Meitner-Straße, Stadtteil Vauban, Freiburg	2000/01	272	5 up to 6-storey open ramped car park	Traffic design, Car park consulting, Structural design	Additional separated houch slab as roof
138	UNDERGROUND CAR PARK Rathausplatz Lahr	2001	50	1-storey underground car park	Traffic design, Structural design	"Watertight concrete construction", round louvres Ø 1.8 m in the top ceiling, uplift-protection by flooding- apertures
139	UNDERGROUND CAR PARK Stadt- schloß Fulda	2001/02	300	3-storey, 2-lane underground car park, 2 semicircle-spindles	Architectural design, Structural design	"Watertight concrete construction", central bus station on the surface
140	CAR PARK Enge- lenschanze, Müns- ter Westfälische Bau- industrie	2002/03	480	6 up to 7-storey open ramped car park, around an atrium (8,50 m x 35 m)	Traffic design, Structural design	ADAC RECOMMENDATION 2004 „User-friendly car park“ EUROPEAN PARKING AWARD 2005 + 2 Successful Competitions <u>1. Price:</u> of invited architect compe- tition together with Architects Petry + Wittfoht <u>1. Preis:</u> of structural engineer competition Superstructure (1-storey, 17 m wide office-floor
141	GROßE PARKROTUNDE P 2 , Flughafen Hamburg Flughafen Hamburg	2002/04	2200	10-storey, 2-lane Rotunda, 92 m in diameter, floor ac- cess by a counter- rotating spindle-ramp in the core.	Traffic design, Structural design, Design of the drainage	SUCCESSFUL DESIGNER COMPETITION According to VOF-procedure
142	UNDERGROUND CAR PARK Main Railway Station, Berlin Emch + Berger	1998/2006	900	3-storey underground car park between the railway tracks and a tunnel of highway 96	Structural layout	Continuous parabolic houches, uplift-protection partially with heavy- weight raft, partially with an an- chored raft
143	UNDERGROUND CAR PARK Goe- theplatz Frankfurt am Main Bilfinger Berger Parking	2004/ 2006	592	3-storey, 2-lane underground car park, entry in the 1st floor, exit from the 3 rd floor, semicircle- spindle for floor access	<u>General Planning:</u> Architectural design, Structural design, House services design	ADAC RECOMMENDATION 2013 „User-friendly car park“ 1st price Covered construction method, „Watertight concrete construction“, top ceiling and foundation slab articulated to the pile wall, option for a 6-storey superstructure, com- bined pile-slab-foundation
144	UNDREGROUND CAR PARK Bowl- ing-Green Wiesbaden Community of Wiesbaden	2005/ 2006	430	2-storey, 2-lane underground car park, 2 semicircle-spindles, 2 entries, 2 exits	<u>General Planning:</u> Architectural design, Structural design, House services design	ADAC RECOMMENDATION 2011 „User-friendly car park“ 1st price Partially covered construction method, „watertight concrete con- struction“

No.	Project/ client	Construction period	No. of places	Car park type	Services AMP	Notes
145	UNDERGROUND CAR PARK St.- Josefs-Hospital, Wiesbaden St.-Josefs-Hospital	2005/ 2006	247	2 ½-storey, 2-lane underground car park, 2 semicircle- spindles	<u>General Planning:</u> Architectural design, Structural design, House services design	Partially covered construction method, permanent anchors be- cause of asymmetric earth pres- sure, „watertight concrete construc- tion“, mechanical ventilation only for the fresh air
146	CAR PARK Kreiskliniken Biberach Biberach County	2005/ 2006	120	1-geschossiges Parkdeck with semi- circle-spindles	<u>General Planning:</u> Architectural design, Structural design, House services design	Kreisbogenförmiger Grundriss, Aufstockung planerisch berücksich- tigt
147	CAR PARK Metro Headquarters, Düsseldorf Bilfinger Berger AG	2006	1330	9-storey, 3-aisle ramped car park	Architectural design, Structural layout	SUCCESSFUL CONTRACTORS PROPOSAL Sophisticated aluminium façade
148	Parking deck Eu- ropabad Karlsruhe	2008	145	1-storey, 3-aisle underground car park	<u>General Planning:</u> Architectural design, Structural design, House services design	Playgrounds on top, natural air circulation
149	Car park P5 Essen Fair	2009	1.143	6-storey, 4-aisle car park with 4 under- and 2 aboveground floors, 2 entries, 2 exits in the ground floor, vertical traffic with semicircle- spindles	Architectural design, Structural design	SUCCESSFUL CONTRACTORS PROPOSAL Landscaping on top
150	Underground car park Rosengarten Frankfurt/M.	2009	185	2-storey, 4-aisle Underground car park	Architectural design, Structural design	Partially public, partially private car park Landscaping on top
151	Underground car park Health center Oberkirch	2010	107	1-storey, 4-aisle Underground car park	Architectural design, Structural design	4-storey partial superstructure above a third of the area, under- ground connection to a neighbor car park
152	Underground car park Alexanderplatz Berlin	2009/ 2011	655	3-storey, 2-aisle Underground car park with four spindles and entry for delivery trucks	Architectural design, Structural design	ADAC RECOMMENDATION 2011 „User-friendly car park“ 2nd price Covered construction method, 6 m water pressure, „Watertight con- crete construction“, top ceiling and foundation slab articulated to dia- phragm wall, combined pile-slab- foundation
153	Extension of under- ground car park St.- Josefs-Hospital, Wiesbaden	2013/ 2014	60	2-storey, 1-aisle Underground Car park	General design	Entry and exit via two adjacent underground car parks. Extension of the project No. 145
154	Car Park Post- straße, Lehrte	2014/ 2016	365	6-storey, 2-aisle car park with full floor ramps	General design	Triangular floor plan, green roof
155	Car Park Railway Station, Winsen	2015/ 2017	542	4-storey, 2-aisle car park with 2 spindle ramps	General design	Park & Ride structure with bicycle park with 312 places, charging terminals for e-cars and e-bikes

No.	Project/ client	Construction period	No. of places	Car park type	Services AMP	Notes
156	Car Park Hospital, Kulmbach	2016/ 2017	155	3-storey, 1-aisle Car Park with 2 spindle ramps	General design	Slope stabilization with a pile wall
157	Car park El Biar, Algiers	2013/ 2017	835	8-storey, 2-aisle car park, ascending traffic by longitudinal ramped parking aisles, descending traffic by spindle ramp	General design in collab- oration	SUCCESSFUL ARCHITECT COMPETITION Bus station with 7 platforms in ground floor Café on the roof 1.300 m ² offices
157	Car park Kouba, Algiers	2013/ 2017	784	5-storey, 2-aisle Car park with 2 spindle ramps	General design in collab- oration	SUCCESSFUL ARCHITECT COMPETITION Bus station with 12 platforms in ground floor Café with Terrace on the roof 1.300 m ² offices 1.050 m ² retail area
159	Car park Hydra, Algiers	2013/ 2018	784	10-storey, 3-aisle Parking ramp	General design in collab- oration	SUCCESSFUL ARCHITECT COMPETITION Café with Terrace on the roof 1.770 m ² retail area, entry tunnel to underground floor
160	Car Park ZOB, Kiel	2016/ 2018	547	6-storey, 2-aisle car park with counter- rotating spindle ramp	General design in collaboration	Trapezoid floor plan Central bus station at ground floor

ANNEX:

Multi-storey car parks with freely spanned parking aisles on the basis of AMP – traffic design but not by using AMP – structural system.

No.	Name of Project	Construction period	Slots	Car park type	Services of AMP	Comments
A1	Underground car park Friedrichsplatz Kassel	1991/92	427	2-storey, 5-lane car park with 2 semicircle spindles	Architektural design, Traffic design, house services design	Predominant use for visitors of the theater, documenta book exhibition, museum. Prestressed flat slabs, Grid: 15,0 x 7,5 m
A2	Underground car park Konzerthaus Freiburg	1992/96	396	3-storey, 6-lane car park with 2 semicircle spindles	Traffic design	ADAC recommendation 1999 user-friendly car park; Common access together with ZOB-Garage, (No. 118), superstructured with Concert house, intermediate ceilings are hunch slabs
A3	Car park Gleisdreieck Berlin	1998	1.500	5-storey (1 underground- and 4 aboveground floors), 2-lane car park with 3 full-circle spindles	Traffic design, tender documents for the raw construction works	3-track railway line (17 m width) on top ceiling; located between metro and long-distance railway track (tunnel); Terrakotta-Facade
A4	Car park Martin-Luther- Ring, Leipzig	1997/99	435	7-storey open parking ramp; parking angle 45°	Traffic design, Consulting in matters of car park design	SAXON STATE AWARD FOR ARCHITECTS Second Place 1999 Steel structure, partially glazed facade
A5	Underground car park DePfa-Bank /Aareal Bank Wiesbaden	1998/99 2006/07	330	2 1/2-storey, 2-lane car park, entry in level -3, 1 semicircle spindel to upstairs, exit in level -1	Traffic design, Consulting in matters of car park design	Different superstructures of the DePfa-Bank with up to 7 floors, continous houch slabs, construction in 2 stages, car park for employees
A6	Underground car park Filmpalast Karlsruhe	1999	233	1-storey, 5-lane car park	Structural layout of the superstructure, Traffic design, Consulting in matters of car park design	Superstructured with Multiplex-Cinema (10 cinemas and several restaurants); Common access with ZKM-Garage (No. 127)
A7	Reconstruction of Underground car park Festplatz I, Karlsruhe	2001	519	2-storey underground car parks with direct floor access	Structural design of the foundation structure	Strengthening of the 1979/80 realised car park (No. 50) to enable a new 6-storey Hotel on the top: 1.40 m high concrete grillage, founded on the underground car park by using reinforced elastomer bearings and 20 new steel-bond columns, strengthening of the waterproof foundation slab by using 29 HPI-Pillars Ø 200 cm, up to 20 m long.
A8	Underground car park Bundesverwaltungsgericht Leipzig	2004 – 2006	310	3-storey underground car park with straight up- and circular down-ramps	Traffic design and consulting in matters of car park design	Triangular floor plan
A9	Car park, Uniklinik Düsseldorf	2006	310	3-storey counter-rotating parking ramp	Architectural layout, traffic design, consulting in matters of car park design	Car park with shopping facilities

No.	Project/ client	Construction period	No. of places	Car park type	Services AMP	Notes
A10	HUGO BOSS Metzingen	2012	496	5 floor, 2 aisle split level car park	Participation in car park conception, tender documents and site supervision	Steel composite structure with stainless steel façade
A11	Extension of HUGO BOSS Metzingen	2015	385	5 floor, 2 aisle split- level car park	Participation in car park conception, tender documents and site supervision	Steel composite structure with stainless steel façade
A12	Car Park Coesfel- der Kreuz, Münster	2016	1116	6-storey, 2-aisle Parking ramp	General design	Replacement for an existing car park of 850 places which will be demolished