

Engineering by Independent Experts

*Towers and Industrial Chimneys
Refractories, Thermomechanics
Reinforced Concrete, Steel and Special Structures*



B+P

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CONSULTANTS-ASESORES

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Von der Ingenieurkammer-Bau NRW
öffentlich bestellter und vereidigter Sachverständiger
für Industrieschornsteine



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Holger LESZINSKI

Martin BREDDERMANN

Managing Partners

Consulting Engineers, *Beratende Ingenieure* (IKBau NRW)

Civil Engineers, *Dipl.-Ing. Konstruktiver Ingenieurbau* (TU Dortmund)

Publicly Certified and Sworn Expert for Industrial Chimneys
(Öffentlich bestellter und vereidigter Sachverständiger für Industrieschornsteine, IKBau NRW)

Listed Structural Engineers
Qualifizierte Tragwerksplaner qTWP, IKBau NRW

Certified Expert for Concrete Maintenance
Sachkundige Planer Betoninstandsetzung SKP, ABB-SKP, IKBau NRW

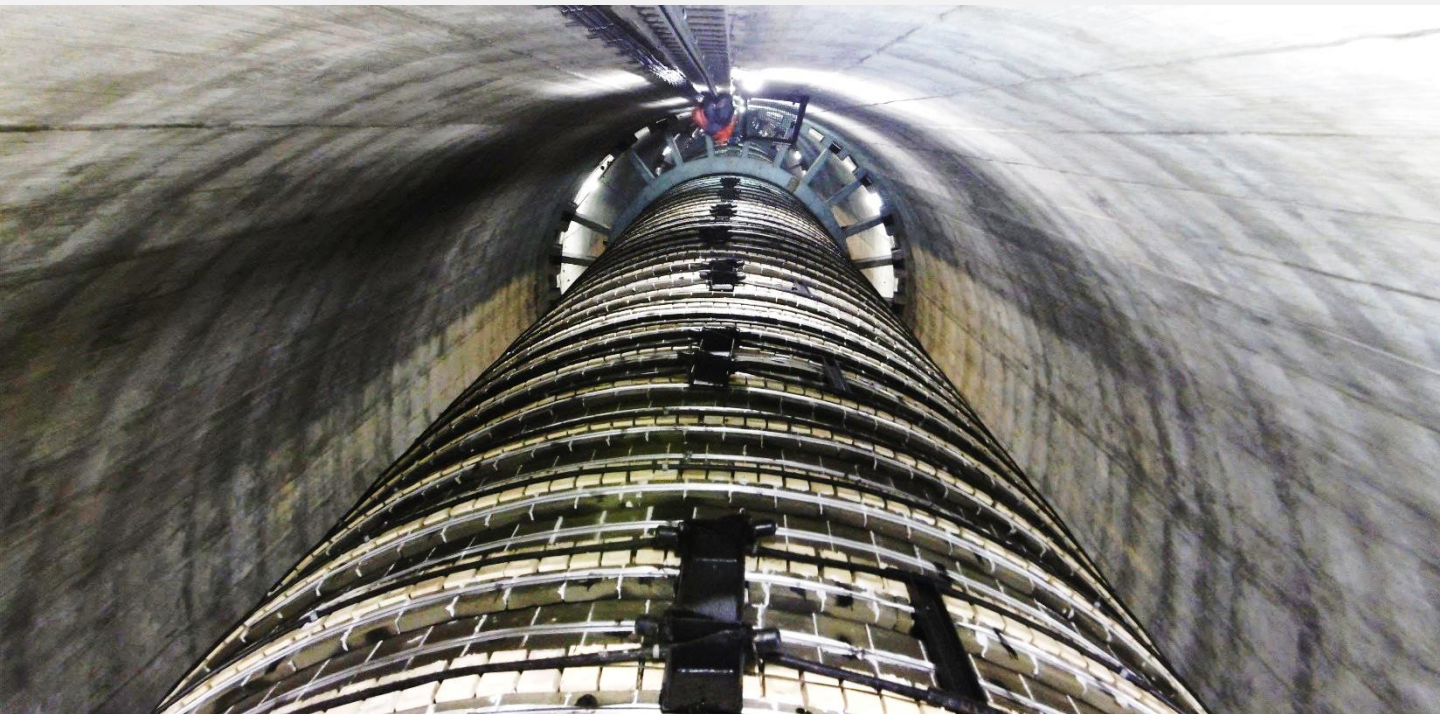
Listed Inspector for Superstructures (IKBau NRW)
Bauwerksprüferin Hochbau, IKBau NRW

European & National Standards Committees
CEN/TC 297 Free-standing Industrial Chimney (EN 13084)
NA 005-11-37 AA Industrieschornstein, SpA zu CEN/TC 297 (EN 13084)
NA 005-08-05 AA Türme, Maste, Schornsteine, SpA zu CEN/TC 250 (EN 1993-3)

dgfs Committees „Thermomechanics Refractories“, „Industrial Chimneys“

CICIND Committees „Concrete“, „Life Time Management“

Presenter at Symposia VGB, CICIND, ICCT, DGFS, IHK etc.
Teacher at TAE, Ingenieurakademie NRW, bauundwissen Schweiz
Publications: VGB Powertech, Betonkalender, Beton- und Stahlbetonbau, Bauportal u.v.m.



Towers & Industrial Chimneys

Expert Opinion & Failure Analysis

Structural Engineering of New and Existing Historical Towers

Dynamics and Earthquake Engineering

Structural and Safety Status Examination

Strengthening and Repair Measures

Gas Flow Calculation, CFD-Analysis

Change in Operation (Wet-Stack, Temperatures etc.)

Change in Load (Scaffolding, Antennas etc.)

Maintenance and Life Cycle Study

Demolition Engineering



DIPL.-ING. MARTIN BREDDERMANN

Von der Ingenieurkammer-Bau NRW öffentlich bestellt und
vereidigter Sachverständiger für Industrieschornsteine

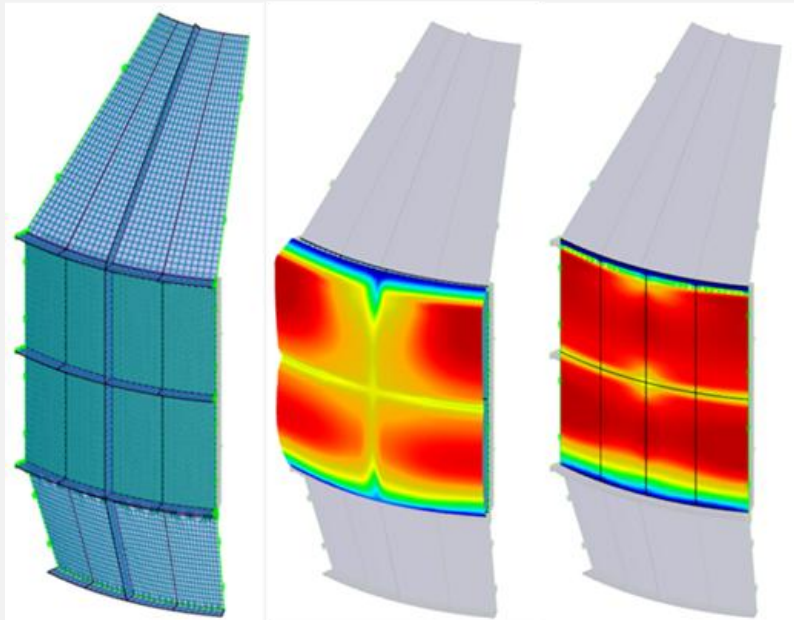
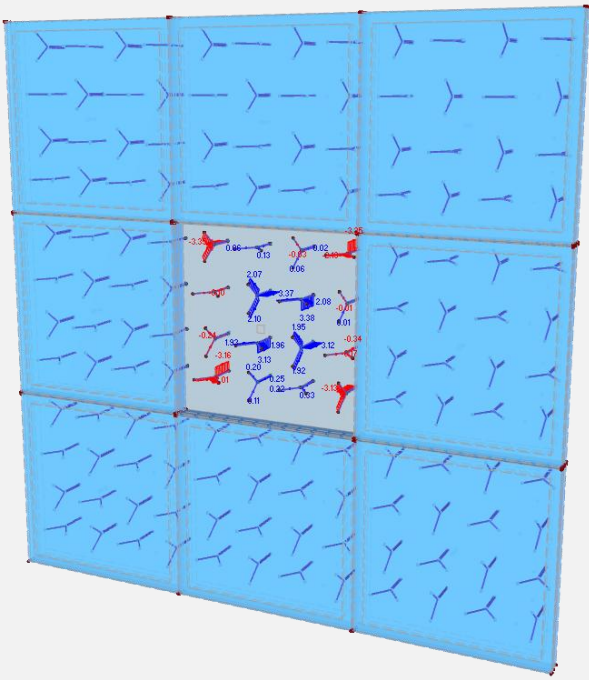


Projects TOWERS & INDUSTRIAL CHIMNEYS

(w/out regular site Inspections)

Excerpt by 04.2025

PNr	Building	Owner	Task
(detailed desription of unit and name of owner may be sensitive data)			
90003	CONCRETE CHIMNEY, Lengerich	DYCKERHOFF	Strengthening
90011	BRICK CHIMNEY, Rasselstein	THYSSENKRUPP	Expert Opinion, Demolition Eng.
90025	BRICK CHIMNEY, Uerdingen	LANXESS	Surveying
90032	BRICK CHIMNEY, Ludwigshafen	RASCHIG	Expert Opinion
90038	CONCRETE CHIMNEY, Schkopau	UNIPER / SAALE	Expert Opinion, Repair Eng., Submission
90042	BRICK CHIMNEY, Hamburg	AURUBIS	Bearing Capacity
90044	CONCRETE CHIMNEY, RDK	EnBW	Drone Inspection
90046	STEEL CHIMNEY, Scholven	BP	Bearing Capacity
90047	CONCRETE CHIMNEY, Altchemnitz	EINS	Bearing Capacity; Demolition Eng.
90056	CONCRETE CHIMNEY, Niederaußem	RWE	Detail Engineering
90067	CONCRETE CHIMNEY, Ratingen	VODAFONE	Expert Opinion
90075	HIST. BRICK CHIMNEY	CITY of Tübingen	Strengthening
90081	STEEL CHIMNEY, Fortuna	RWE	Reconstruction
90086	STEEL CHIMNEYS, Oberhausen	EnergieVO	Expert Opinion
90094	BRICK CHIMNEY, Louisenthal	BPS	Bearing Capacity
90097	HIST. BRICK CHIMNEY, Bonn	CITY of Bonn	Strengthening
90107	BRICK CHIMNEY, St. Egidien	KNAUF	Thermodynamics
90108	STEEL CHIMNEYS, Freital	BGH	Thermodynamics
90119	STEEL CHIMNEY, Essen	TRIMET	Dynamic Bearing Capacity
90124	CONCRETE CHIMNEY, Staudinger	UNIPER	Expert Opinion
90130	LIGHTHOUSE, Hamburg	HPA	Demolition Engineering
90131	BRICK CHIMNEY, Burghausen	OMV	Retrofit Concept
90140	CONCRETE CHIMNEY, Essen	RWE	Expert Opinion
90141	HYBRID CHIMNEY, Duisburg	HKM	Retrofit Concept, Submission
90144	CONCRETE & STEEL CHIMNEYS, Karlsruhe	MIRO	Thermodynamics
90151	HYBRID CHIMNEY, Niederaußem	RWE	Demolition Engineering
90154	CONCRETE CHIMNEY, Großenkneten	EXXONMOBIL	Expert Opinion; Thermodynamics
90158	CONCRETE CHIMNEY, Rotterdam, NL	ESSO	Expert Opinion; Residual Bearing Capacity
90172	HIST. BRICK CHIMNEYS, Berg.Gladbach	CITY of B-Gladbach	Expert Opinion; Residual Bearing Capacity
90175	CONCRETE CHIMNEY, Bergkamen	BAYER	Thermodynamics
90185	BRICK CHIMNEY, Uerdingen	LANXESS	Bearing Capacity
90189	CONCRETE CHIMNEY, UK	RIGG	Strengthening
90190	BRICK CHIMNEYS, Bottrop	ARCELOR MITTAL	Expert Opinion
90199	HIST. BRICK CHIMNEYS, Duisburg	LAPADU-N	Expert Opinion
90201	HYBRID CHIMNEY, Weisweiler	RWE	Demolition Engineering
90202	HIST. BRICK CHIMNEY, Hattersheim	SAROTTI	Bearing Capacity
90232	CONCRETE CHIMNEY, Chmenitz	CHEMNITZ	Demolition Engineering
90245	HIST. BRICK CHIMNEY, Essen	ZOLLVEREIN	Bearing Capacity
90247	HIST. BRICK CHIMNEY, Karlsruhe	KARLSRUHER FÄCHER	Expert Opinion; Residual Bearing Capacity
90254	CONCRETE CHIMNEY, Karlsruhe	KTE	Expert Opinion
90264	HIST. BRICK CHIMNEYS	FABER-CASTELL	Bearing Capacity



Refractories, Thermomechanics

Expert Opinion & Failure Analysis

Design Optimization (layer thicknesses, joints, anchors etc.)

Integral Thermomechanical FE-Systemanalysis

Stiffness Oriented Calculation Methods

Stationary and Transient Temperatures and Stresses

Close-To-Reality Stress Calculation

Parametric Studies of Overall Behavior

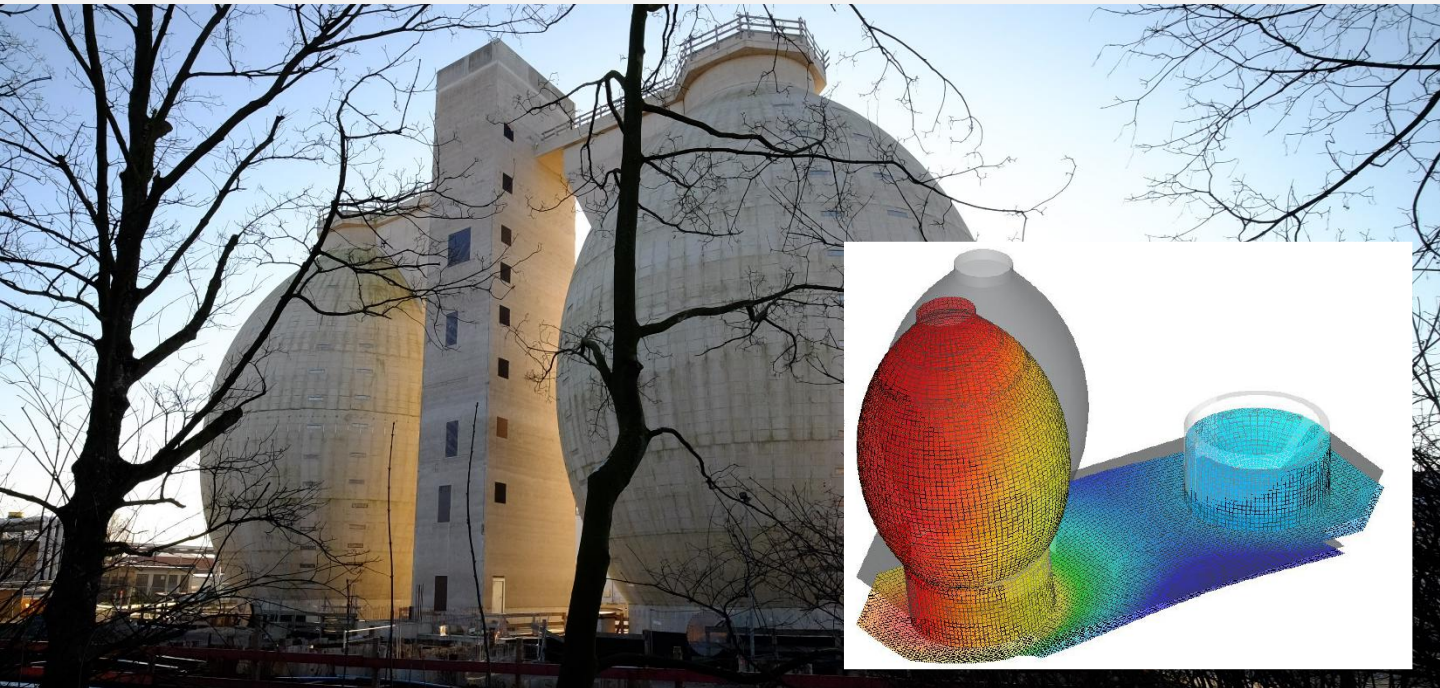
3D-Temperature Distribution

Numerical Flow Calculation, CFD-Analysis

Analysis of Operational Data

Projects REFRACTORIES, THERMOMECHANICS
Excerpt by 04.2025

PNr	Building	Owner	Task
(detailed desription of unit and name of owner may be sensitive data)			
90006	FURNACE, Lining Cracks	W. H. C. Steel	Temperature Comparision, FEA
90013	WALKING BEAM FURNACE, Beams	W. H. C. Steel	Bearing Capacity Comparision, FEA
90028	COMBUSTION CHAMBER, Anchors	W. H. C. Steel	Court Report
90031	FLUIDIZED BED FURNACE, Steel Mantle	W. H. C. Steel	Residual Bearing Capacity, FEA
90037	COMBUSTION CHAMBER LINING, Anchors	W. H. C. Steel	Bearing Capacity Comparision, FEA
90039	RECUPERATOR, Inner Steel Cylinder	W. H. C. Steel	Buckling Failure Analysis, FEA
90041	MULTI-LAYER CHAMBER FURNACE, Heating Elements	W. H. C. Steel	Failure Analysis, FEA
90065	SECONDARY COMBUSTION CHAMBER, Wear Layer	W. H. C. Steel	Deformation Failure Analysis, FEA
90066	PUSHER PLATE FURNACE, Jack Arch	W. H. C. Steel	Bearing Capacity Comparision, FEA
90071	ALUMINIUM MELTING FURNACE, Steel Shell	W. H. C. Steel	Deformation Analysis, FEA
90085	GRINDING WHEEL	W. H. C. Steel	Rupture Failure Analysis, FEA
90095	REFORMER, Manhole	W. H. C. Steel	Temperature Distribution, FEA
90101	ALUMINA MELTING FURNACE, Anchors	W. H. C. Steel	Failure Analysis, FEA
90109	COMBUSTION CHAMBER, Regular and Bracket Areas	W. H. C. Steel	Temperature Distribution, FEA / CFD
90111	WASTE INCINERATION, Bracket Brick	W. H. C. Steel	Rupture Failure Analysis, FEA
90112	GLOW BASE STANDS, Support Subconstruction	W. H. C. Steel	Bearing Capacity, FEA
90123	PUSHER PLATE FURNACE, Arch Vault, Steel Casing	W. H. C. Steel	Bearing Capacity, FEA
90125	CIRC. FLUIDIZED BED PIPING, Compensator, Spring Support	W. H. C. Steel	Stress and Shift Design, FEA
90126	SECONDARY COMBUSTION CHAMBER, Venturi Lining	W. H. C. Steel	Thermodynamic Efficiency, CFD
90145	TUNNEL FURNACE	W. H. C. Steel	Temperature Distribution, FEA
90148	ZINK ROASTER	W. H. C. Steel	R&D Temperature Distribution, FEA
90149	GLASS MELTING FURNACE	W. H. C. Steel	Failure Analysis, FEA
90181	CHIMNEY FGD BY-PASS	W. H. C. Steel	Gas Cooling CFD
90186	PRE-COMBUSTION CHAMBER	W. H. C. Steel	Thermodynamic Efficiency, CFD
90196	CIRC. FLUIDIZED BED FURNACE	W. H. C. Steel	Failure Analysis, FEA
90212	TORCH DETAIL	W. H. C. Steel	CFD
90227	SAR FURNACE	W. H. C. Steel	Failure Analysis, FEA
90228	CIRC. FLUIDIZED BED FURNACE, Nozzle Bottom	W. H. C. Steel	Failure Analysis, FEA
90229	CRUCIBLE MELTING FURNACE	W. H. C. Steel	Temperature Distribution, FEA



Reinforced Concrete, Steel & Special Constructions

Expert Opinion & Failure Analysis

Structural Engineering of New and Existing Historical Towers

Soil Interaction

Dynamics

Stiffness Oriented Calculation Methods

Close-To-Reality Stress Calculation

External and Induced Forces

Crack and Deflection Analysis

Parametric Studies of Overall Behavior

Strengthening and Repair Measures

Maintenance and Life Cycle Study

Watertight Buildings (tanks, troughs etc.)

Historical Structures

Steel and Lattice Structures

Composite Materials and Cross Sections

Projects R/C CONCRETE, STEEL & SPECIAL CONSTRUCTIONS
Excerpt by 04.2025

PNr	Building	Owner	Task
(detailed description of unit and name of owner may be sensitive data)			
90001	CONCRETE CRANEWAY, Buchholz	ELSKES	Load Bearing, Strengthening
90002	CONCRETE DIGESTERS, 2x 8000m³	CITY of HANNOVER	Structural Engineering
90002	WATERTIGHT BASE PLATE, Hannover	CITY of HANNOVER	Structural Engineering
90004	INDUSTRIAL FLOOR, Bochum	THELEN	Cracks: Expert Opinion
90005	SHUTTER DAM, Diemeltal		Load Bearing, Design
90019	RECONCILIATION BRIDGE A30		Load Bearing, Strengthening
90021	HISTOR. EXHAUST DUCT, Braubach	BSB	Predamage: Expert Opinion
90024	STEEL SIGNAL BRIDGE, Hamm	BAHN	Load Bearing, Strengthening
90030	SHELL SHEATHING, Lengerich	DYCKERHOFF	Load Bearing, Design
90050	CONCRETE SKELETON, Porz	DEUTZ	Maintenance and Repair Measures
90056	STEEL PODEST, Niederaußem	RWE	Structural Engineering
90063	OPENCAST MINE TIPPING POINT		Load Bearing, Evaluation
90064	SIDE BUILDING, Mülheim-Kärlich	RWE	Load Bearing; Evaluation
90073	ROPE PROTECTION Staudinger	WIEMANN	Structural Engineering
90075	FRP-STRENGTHENING, Schkopau	UNIPER	Structural Engineering
90077	SIDE PROTECTION NET, Hallendach	E&P	Structural Engineering
90083	CONSOLE SCAFFOLDING, Staudinger	UNIPER	Structural Engineering
90088	STEEL PODEST, Schkopau	UNIPER	Structural Engineering
90110	WATERTIGHT PARKING GARAGE, Köln		Cracks: Expert Opinion
90116	CONCRETE PANELS, Hambach	RWE	Load Bearing, Evaluation
90121	GRID-BEAM-STRUCTURE, Weisweiler	RWE	Impact: Load Bearing
90122	CONSOLE SCAFFOLDING ROPES	BEROA	Structural Engineering
90124	SUPPURTING RING PLATE, Staudinger	UNIPER	Predamage: Expert Opinion
90127	LOAD GALLOW, Essen	MENDE	Structural Engineering
90142	CONCRETE FACADE, Krefeld	GREP	Expert Opinion
90143	ACID GAS CHAMBER, Ludwigshafen	BASF	Structural Engineering
90152	PARKING GARAGE, Bochum	BGW	Maintenance and Repair Measures
90153	HISTORICAL TRAM, Wuppertal	BMB	Structural Engineering
90155	CONCRETE DIGESTERS, 2x 8000m³	CITY of HAMBURG	Structural Engineering
90180	CONCRETE HP-SHELL ROOF, Bochum	KOMPERNASS	Expert Opinion, Residual Bearing Capacity
90184	STEEL GIRDER ROOF, Essen	TRIMET	Bearing Capacity
90257	DUCT INSULATION, Saudi-Arabia	IIG	Structural Engineering
90262	CONCRETE CRANEWAY, Dorsten	FUCHS	Load Bearing, Strengthening

SEMINARS, PRESENTATIONS & PAPERS

Excerpt by 04.2025

2024.06	FH Potsdam – Forensic Eng. Lessons	Risse in Stahlbetonschornsteinen, Tragfähigkeit, Ertüchtigung
2024.02	TAE Academy – 1-day-Seminar	Zwang und Risse im Stahlbetonbau; Grundlagen, Ursachen...
2022.11	TAE Academy – 1-day-Seminar	Zwang und Risse im Stahlbetonbau; Grundlagen, Ursachen...
2022.11	IK-Bau NRW – 1-day-Seminar	Zwang, Risse, Durchbiegungen, Schnittgrößen im Massivbau
2022.06	buw Schweiz – 1-day-Seminar	Zwang und Risse im Stahlbetonbau
2022.05	IK-Bau NRW – 1-day-Seminar	Turmartige Bauwerke aus Stahlbeton, Mauerwerk oder Stahl
2021.11	IK-Bau NRW – 1-day-Seminar	Zwang, Risse, Durchbiegungen, Schnittgrößen im Massivbau
2021.10	CICIND Conference, Dresden	Measures on a Wert Stack with a Leaking Liner During Op. *)
2021.04	IK-Bau NRW – 1-day-Seminar	Turmartige Bauwerke aus Stahlbeton, Mauerwerk oder Stahl
2021-04	TAE Academy – 1-day-Seminar	Turmartige Bauwerke beurteilen, instand setzen und verstärken
2020.08	VGB PowerTech 07/2020	Refractory Linings under Thermomechanical Aspects *)
2020.04	Feuerfest-Symposium, Freiberg	Thermomechanische Analysen im Feuerfestbau Möglichkeiten und Vermeidung von Fehlern (<i>postponed</i>)
2019.10	ICCT Conference, Edinburgh	Statics for Ropes on Tower Construction Sites *)
2019.06	DGFS Fachtagung, Düsseldorf	Thermomechanical Analyses in Refractory Construction Possibilities and Avoidance of Possible Errors
2019.05	CICIND Conference, Madrid	Draught Losses - Changes and Consequences *)
2019.05	BISV (IHK), Köln	Wirklichkeitsnahe Finite-Elemente-Analysen Anwendung im Bauwesen und Einsatzmöglichkeiten im Sachverständigenwesen
2019.03	VGB Fachtagung, Essen	Feuerfeste Auskleidungen unter thermomechanischen Gesichtspunkten
2019.01	Bauportal 1/2019 DGFS-Echo 01.19	Betrieb einer Doppelholmleiter mit Rückenschutz mit Zwischenbühnen in 10m-Abstand zur Wartung von Flughindernisbefeuern (200m-Industrieschornstein) *)
2017.09	CICIND Conference, Vilnius	Shotcrete Sheathing of a 65m-Chimney *)
2017.03	J+G Wirbelschichtworkshop	Thermomechanical FEM-Analyses
2016.10	ICCT Conference, Rotterdam	Keynotes of the Design & Analysis of Towers & Tanks Irrespective of Wind Load Capacity *)
2015.09	CICIND Conference, Boston	Conversion into Wet Operation Problems of a 200m R/C Chimney w/ Sectional Lining *)
2015.04	DGFS Fachtagung, Düsseldorf	Stress-Oriented Design of the Anchors in Refractories
2015.06	DGFS MV, Nürnberg	200m-Schornstein eines Braunkohlekraftwerks Auswirkungen der Umstellung auf Nassbetrieb „Wet-Stack“ - ohne Wiederaufheizung hinter REA *)

**) paper and/or slides available*



B+P, BREDDERMANN+PARTNER, ist eine Gesellschaft unabhängiger Beratender Ingenieure und wird von 3 Partnern mit zusammen über 60 Jahren Berufserfahrung im Konstruktiven Ingenieurbau geführt. **B+P** ist auf turmartige Bauwerke, Feuerfestanlagen und Sonderkonstruktionen des Industriebaus spezialisiert. **B+P** berät, plant und begutachtet im öffentlichen oder privaten Auftrag. Dipl.-Ing. Martin Breddermann ist von der Ingenieurkammer-Bau NRW öffentlich bestellter und vereidigter Sachverständiger für Industrieschornsteine.



B+P, BREDDERMANN+PARTNER, is a company of independent Consulting Engineers and is managed by 3 partners with together more than 60 years of professional experience in structural engineering. **B+P** specialises in tower-like structures, refractory plants and special constructions in industrial construction. **B+P** advises, plans and appraises on public or private contracts. Dipl.-Ing. Martin Breddermann is a publicly appointed and sworn expert for industrial chimneys by the NRW Chamber of Civil Engineers.



B+P, BREDDERMANN+PARTNER, es una empresa de Ingenieros Asesores independientes y está dirigida por 3 socios que juntos tienen más de 60 años de experiencia profesional en ingeniería estructural. **B+P** se especializa en estructuras similares a torres, plantas refractarias y construcciones especiales en la construcción industrial. **B+P** asesora, planifica y evalúa contratos públicos o privados. El ingeniero Dipl.-Ing. Martin Breddermann es un experto en chimeneas industriales nombrado y jurado por la Cámara de Ingenieros de Renania del Norte-Westfalia