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# **Cement, Environment & Minerals**

## **Expert Engineering & Consultancy**

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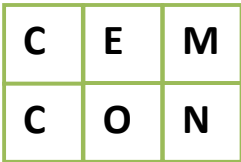
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# CEMCON AG – International Consulting & Engineering in Cement, Environment and Minerals

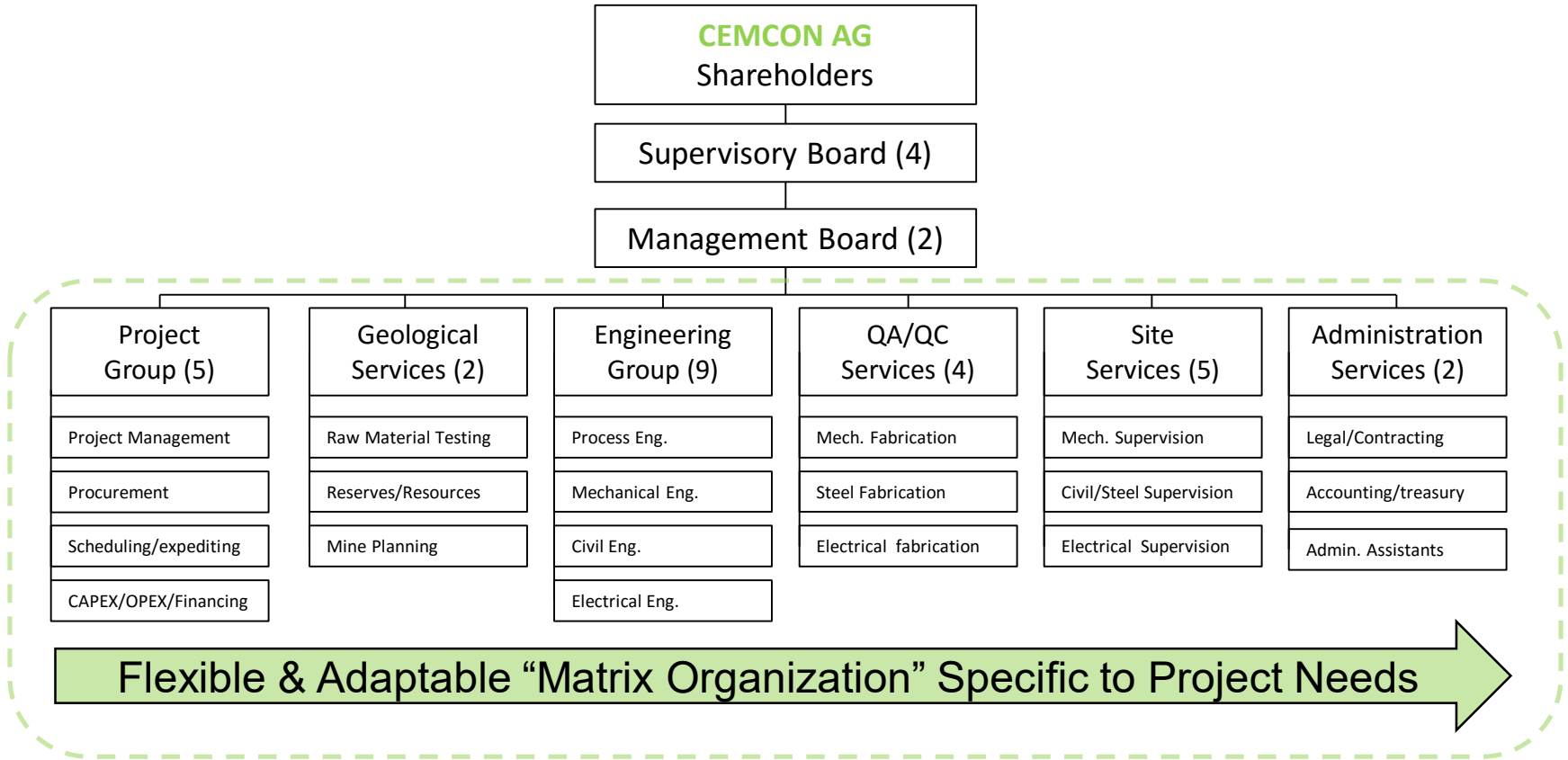
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- CEMCON AG is an Engineering and Consultancy firm that provides Impartial expertise and services to the Cement, Environment and Minerals Industries
- CEMCON Experts have wide ranging expertise and global experience
- CEMCON is based in Switzerland; centrally located with quality guaranteed



# CEMCON AG – Overview Company Organization



CEMCON functions in a Matrix Organization to deliver Interdisciplinary Expertise

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# Latest Project References – Major Involvement of CEMCON – 2013 & 2014



- 2014 – Feasibility Study – Greenfield Cement Plant - Middle East
- 2014 – Lenders Technical Advisor – Pre-investment due diligence for financial syndication – cement production facility – Sub-Saharan Africa
- 2014 – Management Advisor – large capital organic growth projects – Multinational Cement Player – CIS/Russia
- 2013 - Deposit block modeling and exploitation planning (cement grade limestone and marl deposits),- Regional Cement Player, Central America
- 2013 – Lenders Technical Advisor – Pre-investment due diligence for financial syndication – two integrated cement plants , SE Asia
- 2013 - Tendering and Evaluation of a green field specialty cement plant, CIS region
- 2013 - Evaluation, negotiation, contracting, fabrication QA/QC (mech. & elec.), site supervision of a 10,000 tpd greenfield cement plant, SE Asia – EPC Turnkey contracting
- 2013 - Feasibility Study for multiple green field cement grinding stations with a total capacity 4M tpa
- 2013 - Technical Advisor – Pre-investment due diligence for financial syndication for a 3000 tpd green field cement plant in sub-Saharan Africa (DRC)
- 2012 - Tendering, evaluation, negotiation, contracting, QA/QC & site supervision, commissioning for a 750K tpa greenfield cement grinding station in SE Asia – EPC turnkey contracting
- 2012 – Technical Advisor (TA) – Pre-investment due diligence – 9000 tpd integrated cement plant in SE Asia

For complete Engineering & Consultancy **References** visit

[WWW.CEMCON.CH](http://WWW.CEMCON.CH)

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# CEMCON Range of Services & Expertise



- **Consultancy Services**
  - ✓ Capital Investment Projects
  - ✓ Energy & Environmental Sustainability
  - ✓ Market & Strategy Assessments
  - ✓ Financial Viability Assessments
  - ✓ Experts Witnesses (arbitration)
  - ✓ Technical; Commercial, Legal Due Diligence  
(M&A, Priv. Equity and/or Development Syndications)
- **Project Delivery Services**
  - ✓ Project Development
  - ✓ Bankable Feasibility Studies
  - ✓ Procurement (**EP, EPC, EPCM**)
  - ✓ Integrated Eng./Supervision of Eng.
  - ✓ Progress and Quality Supervision
  - ✓ Construction & Commissioning Support
- **Operational Support**
  - ✓ Plant Optimization
  - ✓ Operational Audits
  - ✓ O&M Services

For full disclosure of Engineering & Consultancy capabilities visit

[WWW.CEMCON.CH](http://WWW.CEMCON.CH)

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## Where CEMCON adds Value to Owner Projects & Operations

	<u>CEMCON</u>	<u>ASSOCIATES</u>	<u>PARTNERS</u>
Sales & Marketing (market assessments)	★		★
Capital Project Feasibility, Tendering, Evaluation, Negotiation and Contracting (E, P and C)	★		
Capital project Execution & Implementation	★	★	★
Energy & Environmental Sustainability	★		★
Operational staffing, training and planning	★	★	
Deposit Exploration, modelling and Mine Planning	★	★	
Plant Optimization /Energy Management	★	★	
Full Service Engineering (multi discipline)	★		★

**CEMCON Provides a SINGLE point of Contact and contractual Partner Integrating our Cement Sector Expertise with Specialty Know-How of associates and partners**

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## Where CEMCON adds Value to the Owner – Industry Sector Expertise

	<u>CEMCON</u>	<u>ASSOCIATES</u>	<u>PARTNERS</u>
<b>Pre-/Post Investment Audits (Commercial &amp; Technical) – for Owners and Financial Institutions</b>	★		★
<b>Impartial expert witnesses in dispute resolution</b>	★		
<b>Personnel recruitment, training and derogation</b>	★	★	★
<b>M&amp;A turntable with expertise (buyers and seller)</b>	★		
<b>Industry Sector Benchmarking</b>	★		
<b>Alternative Fuels</b>	★		

**CEMCON is an impartial turn-table , bringing Commercial, Technical and Operational sector expertise to Owner’s M&A and Investing Activities**

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## RAW MATERIAL EXPLORATION

- CEMCON AG provides planning and expert support for raw material exploration and drilling campaigns.
- CEMCON AG's team consists of highly qualified and experienced geologists and mining experts with international reputation.
- Support on surface, initial core and trench sampling.
- Planing and evaluation of drilling grids.
- Supervision of drilling campaigns.
- Tectonical analysis and investigation.
- Stratigraphical analysis and investigation.
- Evaluation of raw material analysis and calculation of raw material reserves.





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## EXPLOITATION AND MINE DEVELOPMENT PLANNING

- CEMCON AG provides quarry planning and development services.
- CEMCON AG applies state of the art 3 D modeling and topographical methodologies (SURPAC and MINEX).
- Elaboration of mine zoning.
- Consideration of maximum minable resources and minimum overburden and waste material.
- Consideration of chemical and physical properties of raw materials and mining sequence.
- Elaboration of quarry road and exploitation fronts.
- Determination of mobile equipment.

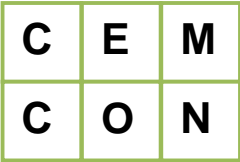


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## TENDERING AND CONTRACTING

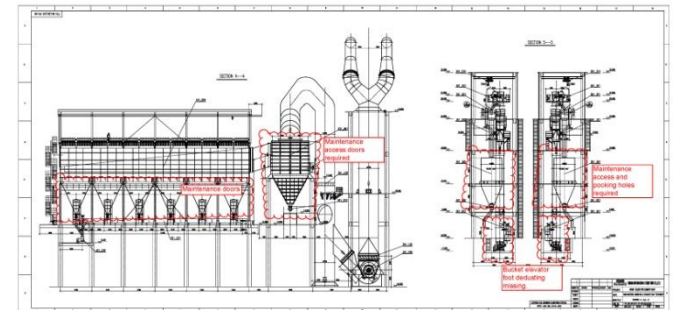
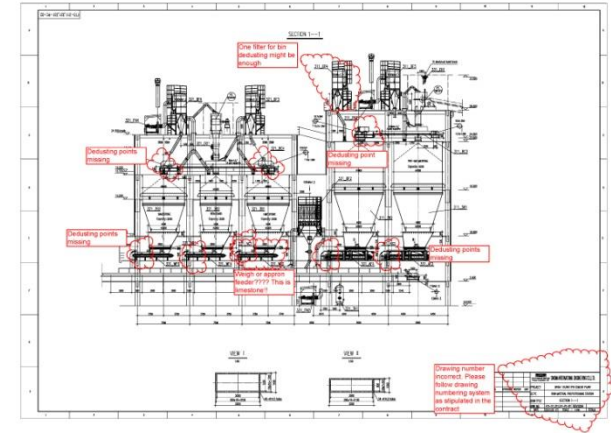
- CEMCON elaborates tailor made tendering documents of international standard.
- CEMCON evaluated and compares impartially the technical, contractual and commercial offers from international suppliers/contractors providing recommendations for decision making by the Clients.
- CEMCON prepares tailor made contract documents of highest standard for EPC, EP+C and MEPC project structures as well as Operation and Maintenance (O&M) Contracts. We support our Clients in contract negotiation and finalization with the focus to protect the interest of our Client.





## REVIEW AND APPROVAL OF ENGINEERING

- CEMCON provides review and approval services of engineering during implementation.
- The review services are covering the complete range of engineering documentation:
  - ✓ Civil engineering
  - ✓ Mechanical engineering
  - ✓ Electrical engineering
  - ✓ Automation engineering
  - ✓ Operation and Maintenance documentation
- CEMCON provides such services „on line“ to avoid project delays caused by revision of engineering.



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## SITE SUPERVISION SERVICES

- CEMCON's site supervision team consists of highly qualified experts, experienced in the execution of large scale industrial projects within an international environment.
- The site supervision services are covering:
  - ✓ Supervision of civil construction (below and above ground level as well as steel and concrete structures)
  - ✓ Supervision of mechanical equipment erection
  - ✓ Supervision of electrical equipment installation
  - ✓ Supervision of automation and instrumentation equipment



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# MANUFACTURING QUALITY ASSURANCE

- CEMCON provides TÜV certified, non-destructive testing engineers for manufacturing quality assurance and equipment inspections in workshops all around the world.
- The scope of services for quality assurance of mechanical and electrical/automation equipment comprises of:
  - ✓ Visual and dimensioning tests
  - ✓ Magnetic particle tests
  - ✓ Ultra sonic tests
  - ✓ X-ray tests
  - ✓ PT- dye penetration tests
  - ✓ Hardness and roughness tests
  - ✓ Rectilinearity and straightness tests



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## COMMISSIONING SUPERVISION SERVICES

- CEMCON's commissioning expert team covers the mechanical, electrical and automation disciplines.
- It includes particular expertise and services related to various plant departments and machinery:
  - ✓ Crushing and transport systems
  - ✓ Raw material, clinker and cement storage and homogenization systems
  - ✓ Raw material and cement grinding systems (Ball mill, Roller Press and VRM)
  - ✓ Various pyro systems including calciners and clinker coolers.
  - ✓ Bulk and packed cement discharge facilities
  - ✓ Auxiliary plant facilities, e.g. compressed air, water distribution systems



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## PLANT OPTIMIZATION AUDITS

- CEMCON's provides a wide and international expertise in plant auditing and optimization.
- The services are customized to the particular subject of optimization. It includes but is not limited to:
  - ✓ Optimization of quarrying, homogenization and raw mixture
  - ✓ Optimization of raw and cement mill performance and operation stability
  - ✓ Optimization of pyro systems including reduction of coatings, improvement of preheater efficiency, optimization of calciner operation, reduction of kiln rings, optimization of burner systems, of tertiary air temperature, of cooler operation and of the sintering process



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## PRE & POST INVESTMENT PLANT AUDITS FOR FINANCIAL INSTITUTIONS (M&A)

- CEMCON is specialized in technical and commercial plant audits for loaning institutions and for M&A (Mergers & Acquisitions)
- The services range of services includes but is not limited to:
  - ✓ Evaluation of raw material reserves
  - ✓ Evaluation of technical design
  - ✓ Evaluation of mechanical and electrical condition of equipment and potential replacement
  - ✓ Evaluation of performance and downtime analysis
  - ✓ Evaluation of plant/company organization and manpower allocation and qualification
  - ✓ Evaluation of environmental and OH&S standards
  - ✓ Determination of asset values
  - ✓ Energy conservation audits
  - ✓ CAPEX and OPEX
  - ✓ SWOT (risk) analysis





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## ALTERNATIVE FUEL AND RAW MATERIAL PROJECTS (AFR)

- The CEMCON has proven experience and reference in various AFR projects. Moreover CEMCON is specialized in AFR projects and technology for emerging countries with no or low disposal fees for AFR materials
- CEMCON services are ranging from:
  - ✓ Sourcing audits and strategies for AFR projects
  - ✓ Feasibility studies for AFR project
  - ✓ Design and engineering of AFR preparation plants (waste to energy facilities for various agricultural, industrial and municipal AFR)
  - ✓ Design and engineering of AFR receiving, handling and feeding systems in cement plants
  - ✓ Adjustment of raw mixture and operation of cement plants for AFR utilization
  - ✓ Design of necessary bypass and bypass dust handling systems

Note: A separate AFR presentation is available.



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## BYPASS TECHNOLOGY

- The CEMCON team has proven record in design and installation of multiple bypass systems and bypass dust utilization systems
- The services are including
  - ✓ Analysis, calculation and determination of volatile circuits in thermal systems
  - ✓ Calculation and engineering of bypass rates
  - ✓ Engineering of bypass systems
  - ✓ Engineering of bypass desusting systems
  - ✓ Engineering of bypass dust transport, handling and utilization systems
  - ✓ Optimization and operation support of bypass systems
  - ✓ Trouble shooting support on bypass systems

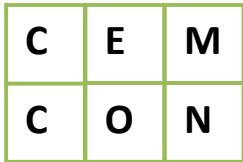


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# PROJECT MANAGEMENT AND CEMENT TECHNOLOGY SEMINARS

- The CEMCON provides courses, training sessions and seminars in:
  - ✓ Project Management & Capital Planning
  - ✓ Cement Technology
  - ✓ Plant Operation & Optimization
  - ✓ Product and Raw Material/Mixture calculation & optimization





## Our Contact Information

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***Thank You! For further information please visit***  
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