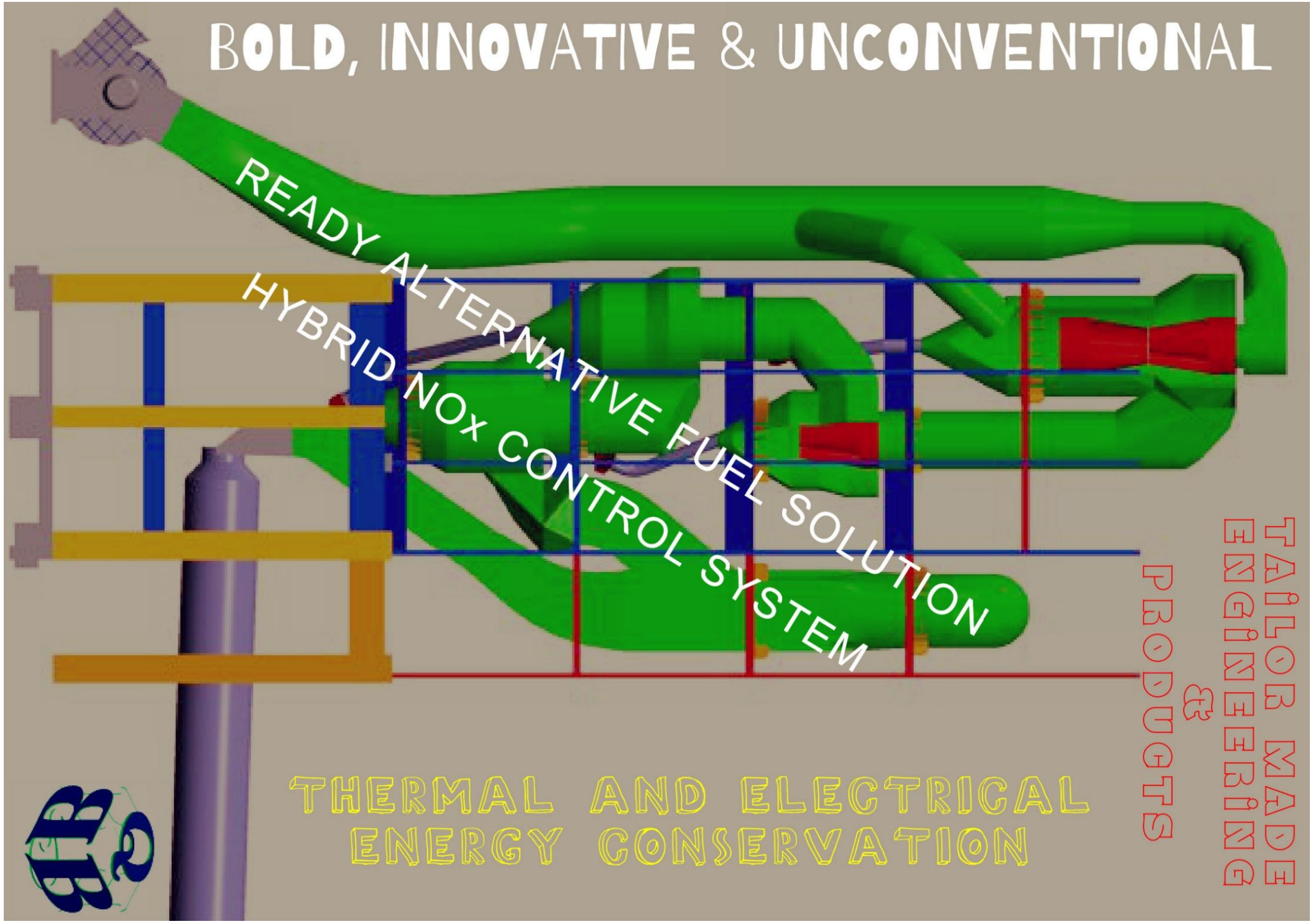
BOLD, INNOVATIVE & UNCONVENTIONAL
READY ALTERNATIVE FUEL SOLUTION
HYBRID NOx CONTROL SYSTEM
THERMAL AND ELECTRICAL
ENERGY CONSERVATION
TAILOR MADE
ENGINEERING
&
PRODUCTS

Established in 2005, BQB Infra Technorium Pvt. Ltd. has built a great success in the heart of cement plant. Concept of working from basic engineering to detailed project engineering and we bring basic ideas to a wonderful reality.

BQB, a company endowed with one of the best multi-disciplinary talents in the country while taking up projects from concept to commissioning draws its main strength from the in-house expertise in the following areas:

1. Feasibility Study
2. Inspection and Audit
3. Design & Engineering
4. Operation & Maintenance of Plant
5. Turnkey Projects
6. Pyro Process Upgrade
7. Alternative Fuel Utilization System
8. NOx & SOx Control
9. Close Circuiting of Ball Mill
10. Hot Kiln Alignment
11. Cooler Optimization

Feasibility Study

Since last one decade, BQB has been involved in finalization of plant concept, system design/redesign including preparation of flow sheets and plant layout for brown field and green field as well. Preparation of tender, evaluation of contractor's drawing and documents, inspection of fabrication activity and manufactured equipment, supervision of installation and commissioning are our core competencies. Modus operandi that we follow for feasibility study:

1. Site Inspection
2. Market Research
3. Base level engineering
4. GA drawing and process flow sheet
5. Bill of material and cost analysis
6. Detailed engineering and submission of manufacturing drawing
7. Technical specification of equipment
8. Project cost analysis and ROI analysis
9. Detailed report submission
10. Erection drawing
11. Supervision of Fabrication/manufactured equipment
12. Supervision of installation and commissioning
13. Performance guarantee test

Inspection and Audit

Improving your plant's energy efficiency and productivity begins with benchmarking. After all, you cannot manage what you cannot measure. We always propose to execute the audit activities in two phases. In phase#1, process experts are deputed on site to gather all the data for every operational unit viz. Crusher, Quarry, Silo, Raw Mill, Preheater, Calciner, Kiln, Cooler, TAD, Cement Mill, Classifier and all Fans etc.

We carry our own equipment to measure pressure profile, temperature profile, ΔP, return dust, O_2% etc. Record of energy consuming equipment, track hours of operation and details of your consumption level are collected to analyse the possibilities to reduce power consumption (kWh/T). Log sheets for fuel consumption are very important documents to analyse and suggest modification to reduce the thermal consumption (Kcal/KgClinker).

This exercise identifies present operation philosophy, bottlenecks in operation, actual margin in your system and energy conservation measures that will help you become more efficient, more competitive and provide ongoing operational savings.

In phase#2, we summarise our findings in a report that includes following attributes:

1. Aim of the client/Purpose of ongoing audit
2. Present condition and operational philosophy
3. Existing plant data summary for all unit operations
4. Possibilities and margin for production upgrade/reduction of power and fuel consumption
5. Our concept for upgrading your plant
6. Equipment sizing/Utilization of existing equipment
7. Basic Engineering and System Design for all unit operations
8. Air, Mass and Heat Balance for existing and modified circuit
9. GA drawing along with BOQ for modified/suggested circuit
10. Project cost analysis along with ROI (payback) analysis
11. Downtime analysis
12. Possibilities to utilize alternative fuel (concept and ROI analysis)
13. Impact on environment (our equipment are designed to keep emission <30 mg/Nm^3)
14. Concept of controlling NOx and SOx

Major References

- Ultratech Cement Ltd (M.P., India)
- Arghakhanchi Cement (Nepal)
- Jaiprakash Associates Ltd (India)
- PPC Ltd (South Africa)
- Birla Corporation (Satna, India)
- Pioneer Cement (Dubai, UAE)
- Holcim (Himachal, India)
- JK Lakshmi Cement (India)

Project Management

Our experienced team of project managers is able to control project execution from the initiating phase through installation to the final handover to the client.

We also provide site management services for cement and lime plant in India as well as abroad. The services cover all disciplines of project work related to the cement work.

1. Detailed planning for various activities like design and engineering, material procurement and manpower mobilization.
2. Detailed resource planning.
3. Immediate mobilization of manpower on award of project.
4. Regular monitoring of implementation of schedules at site by the help of most modern software.
5. Generating DPR and MPR.

Turnkey Project

Having one of the most experienced team in the world, BQB is known as a One Stop Solution company for turnkey projects. When there is a need to take specific action, we will help you determine the plan of action based on your priorities. This plan outlines the final budget for your project and serves as a road map for the implementation of schedules.

To ensure your project is completed on time, within budget and with minimal disruption, BQB takes care of managing every detail, including material suppliers and subcontracted labour. Upon completion, our process experts oversee the final testing and start-up of the installed equipment to make sure you achieve the expected results.

Our modus operandi has always been appreciated as we start our work with a detailed techno-commercial audit. This report serves you as a road map and gives you a very fair idea about economic viability, return on investment (ROI), risk factor, and quality & customer satisfaction.

Below are the list of projects that BQB is willing to take up as Turnkey:

1. Dismantling, Packing & Forwarding, Reassembly and Re-erection of any operation unit
2. Design, Engineering, Supply, Installation and Commissioning of Alternative Fuel Utilization System (Civil Engineering also included)
3. Close Circuiting of Ball Mill (Design, Engineering, Supply, Fabrication, Erection and Installation)
4. Conversion of ESPs to Bag House to control the emission <20 mg/Nm^3
5. Upgrading the existing ESP to control the emission <30 mg/Nm^3

Operation & Maintenance (O&M)

With more than 30 years of working experience in cement plants, BQB is able to maximize your profit % by outsourcing operating & maintenance of plant. We have been called up by people to visit their plant running at 50-60% of its designed capacity. Having best process knowhow in this world we have been able to maximize the productivity upto 120% of designed and reduce the thermal and electrical power consumption.
To ensure your efficiency improvements are achieved month after month, we provide ongoing maintenance and management for projects that have been implemented. We'll monitor the changes in your facility, such as hours of operation, new equipment, routine maintenance schedules and anything that may impact on power consumption and productivity. Our energy expert and production expert will also keep suggesting you about the latest technology.

By deputing our HODs, Lab Technician and CCR operators we ensure following:

1. Total optimization of plant process and performance
2. Detailed analysis of Production Report and Power Report – Daily Basis (In case power and production report is not in practice, we establish one)
3. Generating MIS Report – Weekly Basis
4. Condition Monitoring of equipment & Pro-active measures – Monthly Basis
5. Detailed analysis of Mills and Report Submission – Monthly Basis
6. Detailed analysis of Pyro Process and Report Submission – Monthly Basis
7. Generating Fan Curve and detailed analysis of Fan -
8. Suitable Raw Mix Design as per the quality policy
9. Minor in-house modification to reduce thermal and electrical power consumption and enhance productivity

The basic principle of Operation & Maintenance (O&M) is that you contract us to operate and maintain your plant. In doing so, we guarantee your output levels for an agreed price per tonne. Our fee is performance-based. You just have to take care of basic provisions viz. Raw Materials, Fuels, Spares etc. and we shall take responsibility for the plant performance.
When the O&M contract expires, your plant will be returned in optimal working condition, including a competent, engaged and organised workforce, all the required computer hardware and software, as well as tools and equipment used for operating the plant.

Major References

- Arghakhanchi Cement Pvt. Ltd. (Nepal)
- Pawan Cement (Gujarat, India)

Design & Engineering

Our design engineers utilize years of experience and latest modelling software to ensure 0% error while building manufacturing drawing. Design analysis is done on ANSYS to ensure highest quality. As we have extensive project engineering experience having put up several industrial plants in India, you can use our services in the manner you find desirable and beneficial to your company. We are experienced in optimization of design both from cost and performance point of view so you can try us for design assignments too. We aim to provide high strength to weight ratio on our designed structures. Using our extensive knowledge on Auto-CAD and PRO-E, we provide you macro level details, connection details, hardware list, BOQ and the match-mark, which facilitates its proper packing and dispatch to site and its erection in position.

Something unique about us is the innovative engineering proven and tested over a decade, and the advantages as you know are manifold. Each and every equipment designed by us is tailored made. We don't have any standard design criteria as we have always believed that "there are no old roads towards the new direction".

1. Design and engineering of Preheater (Green Field + Brown Field)
2. Design and engineering of Calciner (Green Field + Brown Field)
3. Design and engineering of Ultra LP Cyclone and Double Dip Tube Cyclone
4. Design and engineering of 4th generation Classifier
5. Design and engineering of ducts and chutes especially designed for lesser ΔP (For all unit operation)
6. Design and Engineering of Powder Cooler
7. Design and Engineering of inverted cone Cement Silo

Major References

- Design and Engineering for entire Pyro Process, Grinding Section and Venting System to enhance the production from 570 TPD to 900 TPD. A new 2 stage Preheater was suggested to bring down the heat consumption from 1100 Kcal/KgCl to 850 Kcal/KgCl. Our designed 4th generation classifier was suggested to cater the requirement of additional raw meal. An old cement mill was assessed separately to take care of additional cement production.
  Client: PPC Ltd. (Port Elizabeth) South Africa
- Design and Engineering of Powder Cooler, Cement Silo and Material Handling System
  Client: Lafarge Cement (Egypt)
- Design and Engineering for 2 units of Guide Vane; 1 left turning and 1 right turning
  Client: Ultratech Cement Ltd. (India)
- Design and Engineering for Coal VRM
  Client: Birla Corporation (India)
- Design and Engineering for entire Pyro Process, Grinding Section and Venting System to enhance the clinker production from 2200 TPD to 5000 TPD. New preheater was designed on same PH footings and without disturbing major columns and beams. A pre-grinder was proposed before existing Raw Mill to cater the additional requirement of raw meal. Cement Mill was also modified in terms of grinding media and no. of chambers.
  Client: PPC Ltd. (SK8 Unit) South Africa
- Design and Engineering of Guide Vane
  Client: Birla Corporation (India)
- Design and Engineering for Kiln Shell
  Client: Arghakhanchi Cement (Nepal)
- Redesign of Preheater Cyclone
  Client: Birla Corporation (India)

Pyro Process Upgrade

Being most important part of cement plant Pyro Process has our best attention. Modification done from our platform are still a milestone for other OEMs and Engineering companies. We are to Pyro Process System what Bill Gates is to Operating System.

Over a period of last decades, it has been realized that no engineering company or OEM has been able to match the pressure drop (system resistance) and thermal efficiency as compared to our engineering. We have been successfully applied tailor made cyclones in many cement plants across the globe. Our ideas have always been best appreciated when an analysis is done to arrive at project potential with techno commercial feasibility. So far all our guarantees have been very easily achieved till date.

Our cyclones are tailored made and guarantees are given on pressure drop and collecting efficiency. Our cyclones are able to collect >95% of material while keeping the ΔP <45 mmWG. We propose to upgrade Pyro Process with following goals/aim:

1. Reduction of ΔP across cyclones (Ultra LP cyclone and Double Dip Tube Cyclones are installed)
2. Enhancing ΔT across riser duct (better material distribution and heat distribution)
3. Enhancing the productivity by increasing the volume handling capacity of cyclones (Any normal cyclones can be converted to Ultra LP cyclone or Double Dip Tube cyclone)
4. Reduction of fuel consumption
5. Redesign of calciner for better burning of fuel, and enhancing the resident time. Also our designed calciner takes care of NOx emission.
6. Reduction of power consumption at fan.

Major References

- Modification of Preheater cyclones and dip tubes in top stage, 3rd stage and 4th stage to reduce the return dust and outlet temperature.
  Client: Mehta Group (India)
- Pyro Process Modification for production increase
  Production increased from 3800 TPD to 4800 TPD.
  Client: Mehta Group (India)
- Complete Preheater and Calciner modification for a production level of 4300 TPD.
  Client: Birla Corporation (India)
- Design and Modification of 3rd stage cyclone to reduce the ΔP across cyclone and enhance the productivity.
  Production increased by 150 TPD and ΔP reduced by 50%.
  Client: Birla Corporation (India)
- Preheater top stage modification to reduce pressure drop and enhance collecting efficiency.
  Client: Ultratech Cement (India)
- Complete plant upgrade from 1600 TPD to 3200 TPD. Plant was in package but installed with redesign and re-engineering to achieve 3200 TPD.
  Client: Pakland Cement (Pakistan)

Alternative Fuel Optimization

The cement industry has a significant interest in replacing fossil fuels with alternative fuels in order to minimize production costs and reduce CO_2 emissions. These new alternative fuels are in particular solid fuels such as refuse derived fuel (RDF), tire-derived fuel (TDF), meat and bone meal (MBM), waste wood, sewage sludge, paper and plastics. However to use alternative fuel it becomes mandatory to redesign calciner for better burning of fuel by increasing the resident time inside the calciner.

BQB prefers to take up such projects as turnkey. We take care of all aspect from base level measurement to basic engineering, detailed engineering, supply erection and installation. Our designed system is comprised of Sizer, Storage and Mixing Cabinet, Hopper, Extraction System, Dosing System and Conveying System. Bought outs are purchased from our business associate ATS Group.

NOx and SOx Control

Regulations to reduce NOx & SOx emission have been around decades but frequest changes have kept the industries on its toes regarding which type and how many measures to install. A number of modification are available for combustion and post combustion to reduce the NOx. That's where BQB comes into the picture as it possess best process knowhow to redesign calciner and design a SCR & SNCR system to control NOx.
BQB has expertise in the control of NOx emissions from stationary sources. NOx is formed in the combustion process, and when emitted combines with volatile organic carbon (VOC) in the atmosphere to form ozone, an ambient criteria air pollutant regulation. NOx emissions also combine with ammonia to form PM2.5, another criteria pollutant regulation. BQB offers a wide verity of options for NOx control:

- ✓ Combustion modifications (Calciner Modification)
- ✓ SNCR (Selective non-catalytic reduction)
- ✓ SCR (Selective catalytic reduction)

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