



中国建材

Sinoma

Sinoma in Mining Industry

SINOMA

Introduction



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Company profile

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3

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4

Main Project Performance

1. Company Profile

History

- **Sinoma**, established in **1953**, is the technology and engineering platform under the Fortune Global 500 Group - China National Building Material Group, the world's leading service provider for building materials and non-metal mining technology.



- Sinoma in Mining industry: Since **1958**, the State Building Materials Bureau established the mining construction company, which is the source of the mining industry of Sinoma

1. Company Profile

Mining industry development

| 1985

China's first explosion

In the Fujian Shunchang cement factory, a thousand tons of blasting, a charge of 1708 tons, the total blasting earth and stone about 1.23 million cubic meters, CCTV, Fujian TV respectively reported, known as the building materials mine "China's first explosion."

| 1998

Business transformation

To undertake the cement ore mining project in Ulan, we created the first mining service business and realized the transformation from engineering construction to mining service business.

| 2008

First underground metal mine

Guangdong Meizhou molybdenum mine project, 400 meters deep auxiliary shaft digging, 2500 meters slope, return air system, drainage system and chamber, the total length of the shaft and lane 9.7km, total excavation volume 156,000 m³.

| 2016

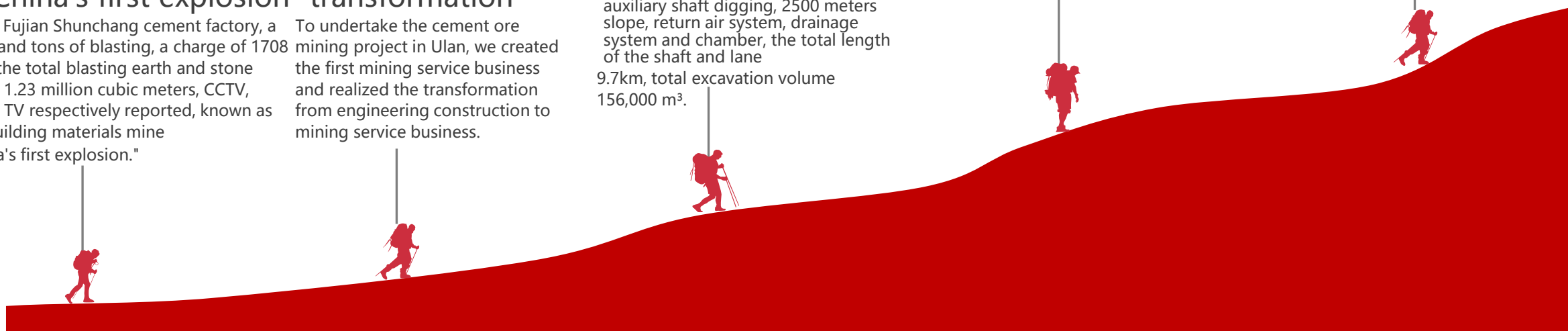
First overseas mine

Signed the Saditha Engineering construction and mining service project in Vientiane, Laos

| 2023

Expand the "two foreign" market

On the basis of consolidating traditional business, vigorously expand overseas and cement aggregate industry foreign market business proportion.



1. Company Profile

Green mine develop

- The builder of ecological civilization and the vanguard of green development
- Continue to build green, low-carbon, intelligent, beautiful mines with higher company standard than the national industry standards
- Professional service for Mine have obtained a better market brand



Green mine
172 Projects

National green mine
45 Projects

Province green mine
127 Projects

1. Company Profile

Technological innovation

Built many industry-academia collaboration bases, mining laboratories, and scientific research projects by cooperating with various mining research institutions and universities,

Deep cooperate with enterprises Changchun Gold Design Institute Co., Ltd., Shandong Gold Group, and China National Gold Group.

The Industry-University-Research Base of Earth cooperated with Jilin University and Tianchi Molybdenum Industry

National Mine Safety Administration Key Scientific Research and Experimental Base for Disaster Prevention and Control in Non-Coal Open-Pit Mines was inaugurated at the Shulan Molybdenum Mine.



Mine EPC contracting provider
Excellent project managers

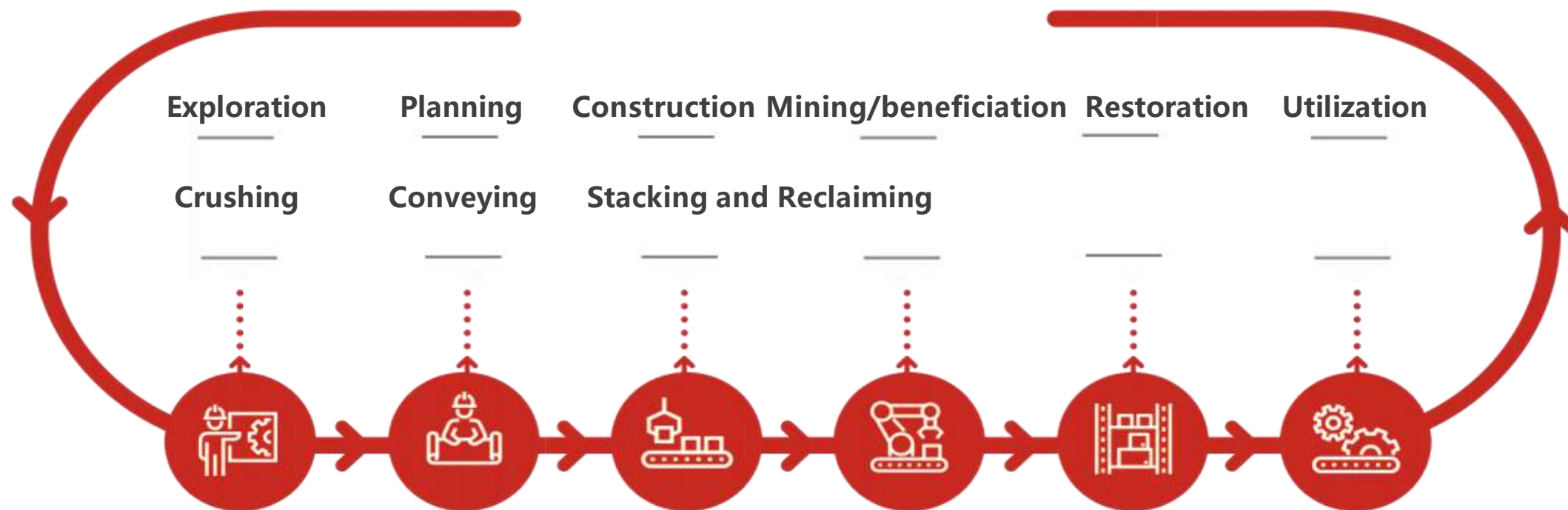


2. Main Business Scope

Mining Industry main business

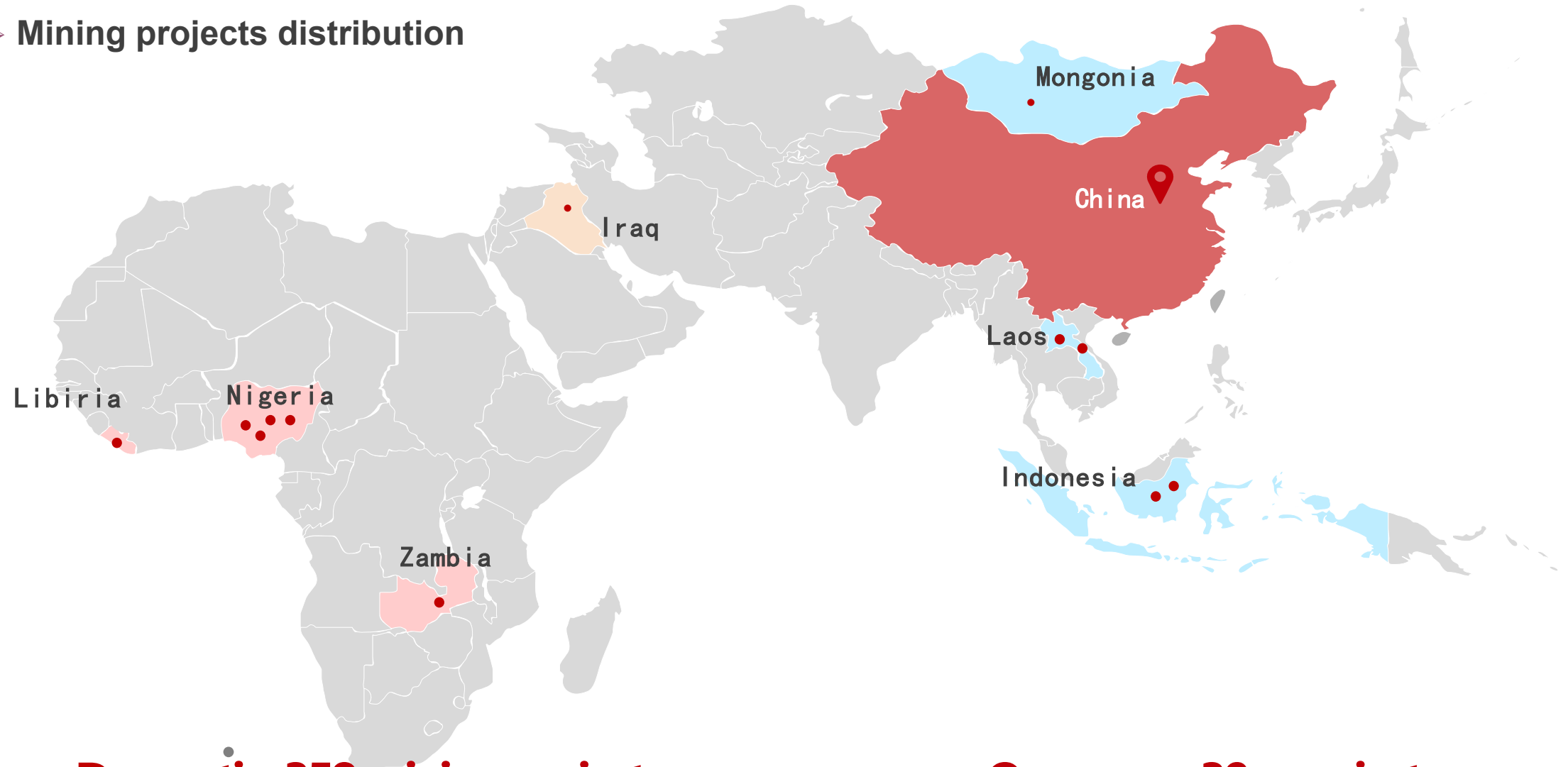
With technological innovation as the core, covers the whole life cycle of mines and provides the whole industrial chain
"One-stop" integrated services for customers and achieve a win-win situation between resource development & ecological protection.

Mine system whole industry chain whole life cycle integration service



2. Main Business Scope

➤ Mining projects distribution



Domestic: 358 mining projects

Overseas : 30+ projects

2. Main Business Scope

➤ Foreign Branches

3000+ foreign employees,
and the localization rate of
employees exceeds 75%

Bachelor degree or above
accounted for 99.4%

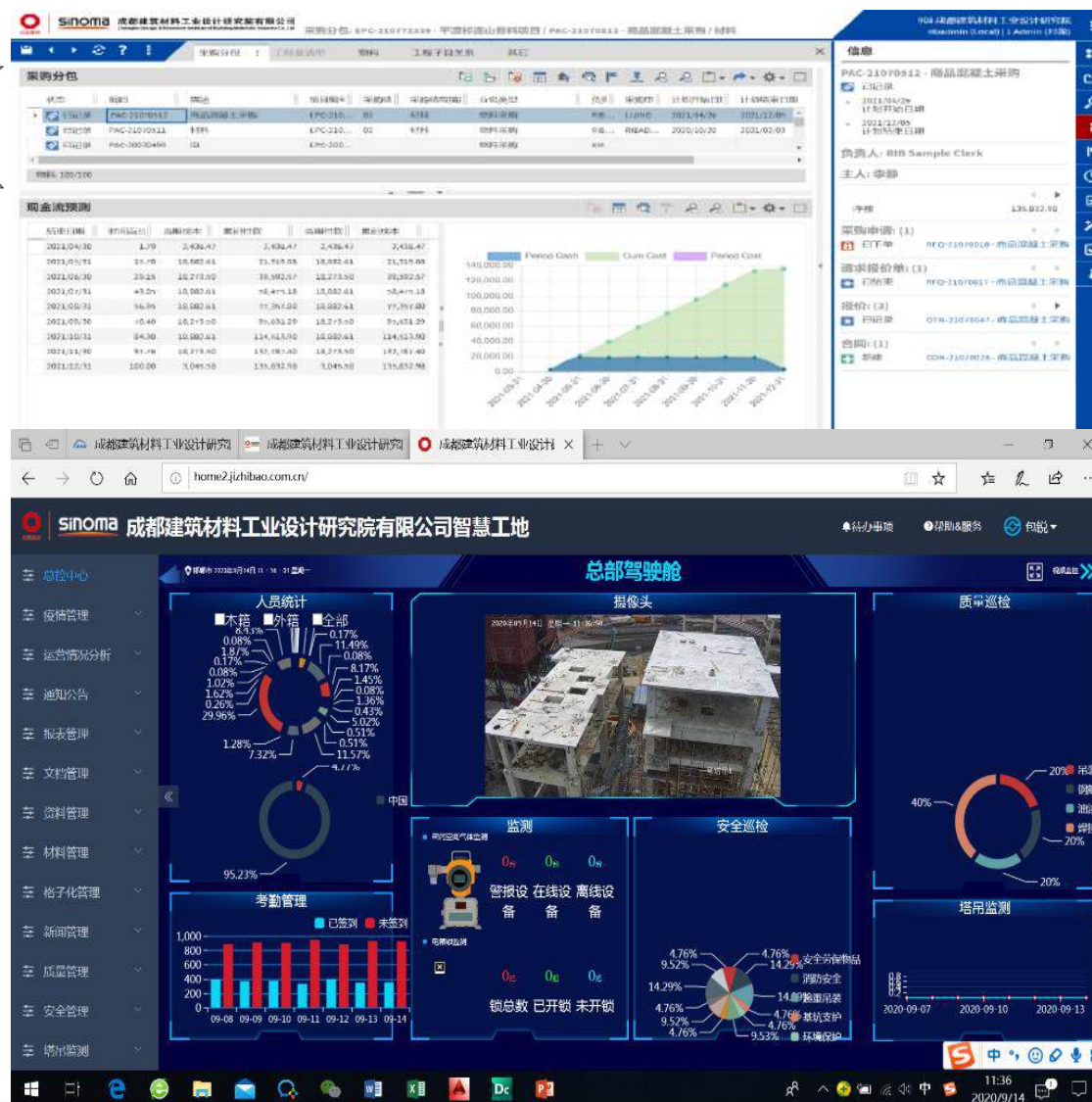
87% are under 40 years old



2. Main Business Scope

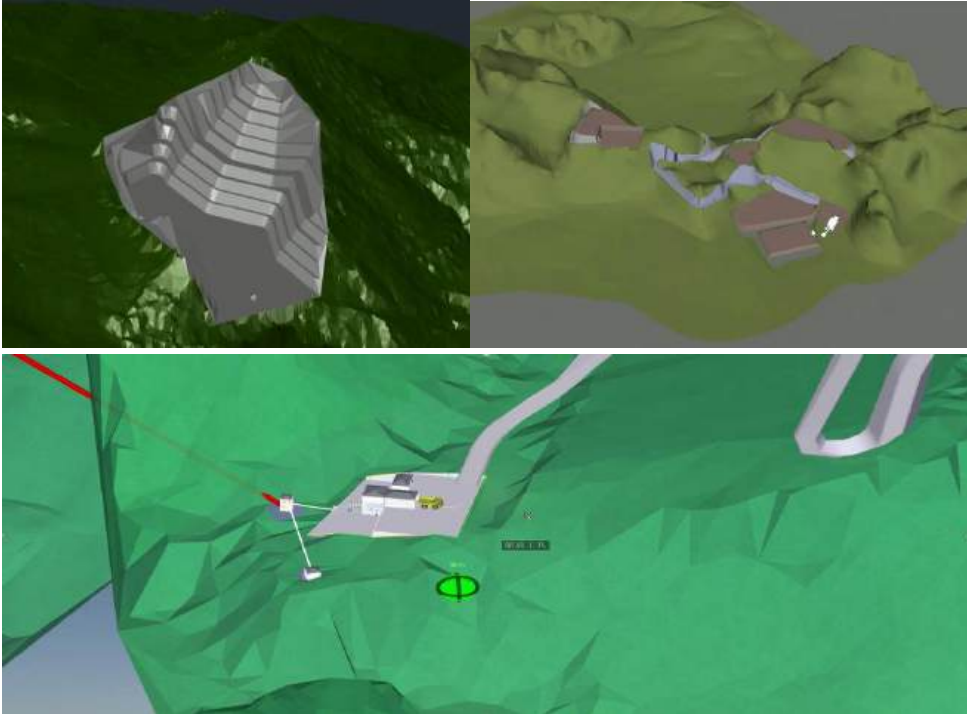
➤ Engineering & Designing

Advanced EPC Project Management system



2. Main Business Scope

Mining BIM Design system



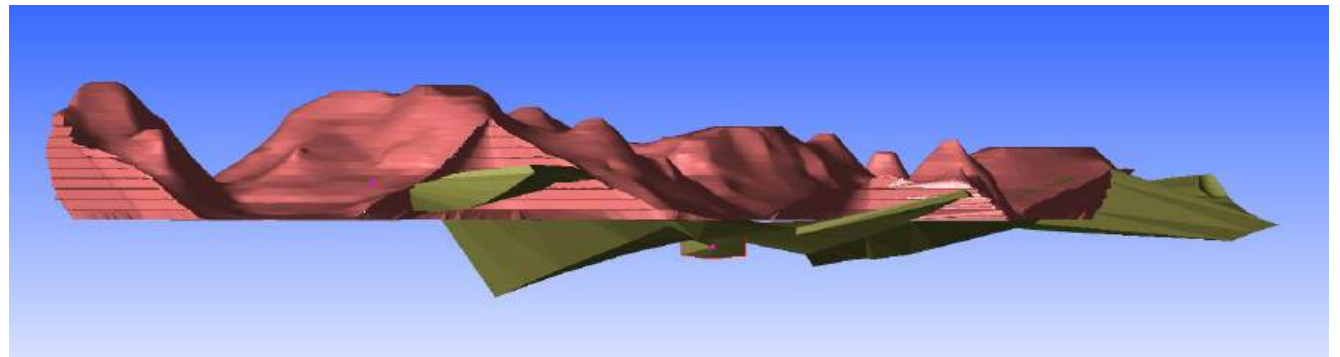
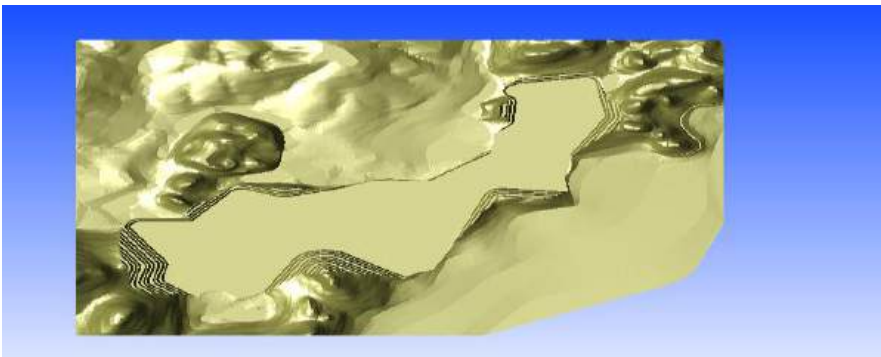
Green Mines



Smart Mines



All mining professionals use the mining geological modeling software Dmine, civil3D, inventor, etc. to perform 3D modeling of the mining realm, roads, dumps, crushing and conveying systems.



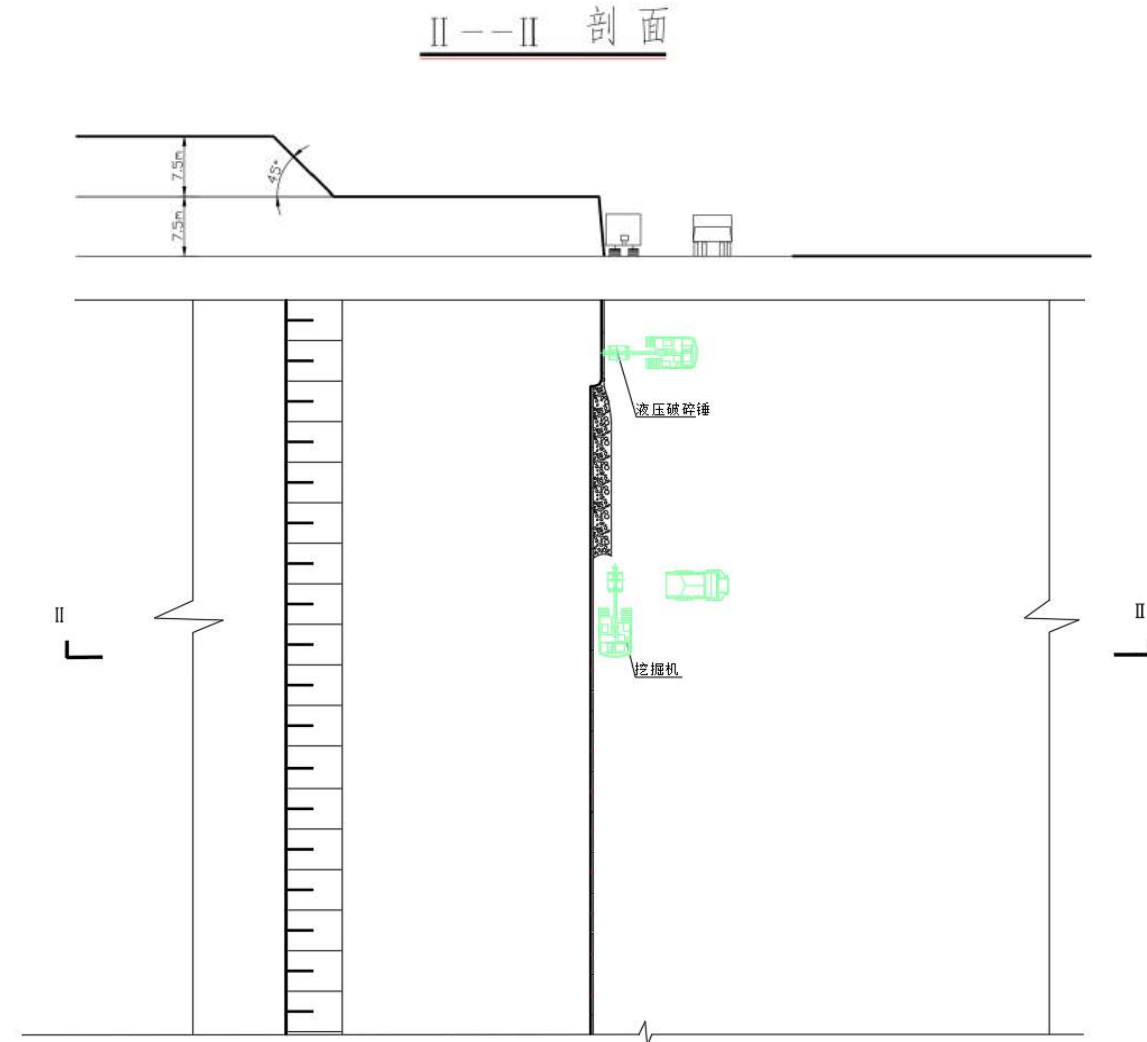
2. Main Business Scope

Hydraulic Rock Crushing Hammer technology

Hard rock mining process: hydraulic crushing hammer crushing —loader/excavator shoveling —car transportation.

Soft rock mining process: loader/excavator shoveling—car transportation.

Main parameters: bench height and angle of bench slope: when the site take mechanical shoveling and non-blasted mining, bench height will not greater than the maximum digging height of the machine. (For example, the maximum digging height of the hydraulic excavator is 10.33m, so the step height is taken to be within 10.33m.) Angle of bench slope of limestone needs to no bigger than 75°, Angle of bench slope of topsoil stripping needs to no bigger than 45°, The smallest working bench width is 35m, the shortest working line length is 60m per machine.



2. Main Business Scope

Hydraulic Rock Crushing Hammer Technology



Direct Mining with Horizon King Continuous Surface Miner

Green mine effect map

2. Main Business Scope

Carbon dioxide blasting temporary technology

Carbon dioxide blasting temporary technology is not mature enough and the cost is high.

It is mainly used for that the surrounding environment is complex, it can not be used when blasting in China.

The main principle is using gas expansion to make the rock crack, generally does not produce flying rocks.



3. Manufacture in Mining industry (*Hazemag-Subsidiery of Sinoma*)



- The horizontal impact roll crusher of the HHI series mainly consists of two machine components: the impact roll and the chain conveyor. The arrangement of the crushing roll above the chain conveyor permits to use the chain conveyor as feed and as discharge conveyor.

Main advantages

- Crushing of the feed material directly on site
- At-degreese material feeding
- Highly mobile
- Suitable for narrow underground conditions and tunneling
- Set-up without foundations
- High crushing ratio
- Variable length of chain conveyo

Typical application

- Coal and ore mining underground and open pit
- Aggregates
- Recycling of concrete and rubble

3. Manufacture in Mining indust (*Hazemag-Subsidiary of Sinoma*)



- The Feeder Breaker HFB is a complete horizontal roll crusher plant, which works according to the field-proven principle of crushing in the horizontal material flow.

Main advantages

- Crushing of feed material to suitable size for belt conveyor transport directly at the face
- At-degreese material feeding
- Set-up without foundation
- Highly mobile
- Variable length of chain conveyor
- Arrangement of picks depending on task

Typical application

- Underground coal and salt mining
- Open pit gypsum, chalk and coal mining
- Stockyards and transshipment sites, especially slags, petroleum coke and others

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



Chain Feeder

- Chain conveyors are successfully used in different branches and applications. Especially coarse or cohesive material as usually occurring in mining and mineral processing,

Main feature

- Low-profile and rugged design
- Modular design, subsequent lengthening or shortening without special tools
- No foundation required for the set-up
- No feed hopper is required
- Frequency converters permits variable conveying speeds and thus different conveyor capabilities with one conveyor

Typical application

- On stockpiles and transshipment sites
- Bulk goods transport, especially coarse or cohesive materials in mining and mineral processing

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



Dinting Loader

- The dinting machines stand out for a simple as well as compact and serviceable design and high operational reliability.
- The assembly groups which are designed according to the unit construction principle are easy to transport and may be quickly assembled underground.

- MINING dinting loaders with crawler tracks are used in underground mining for straightening the rock which had swollen due to geological influences. They are indispensable for ripping up the drifts as well as for loading and crushing of loosened rock. They are equipped with a bucket in which hydraulically driven percussive bits are integrated.

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



- The HMF is a crawler-mounted and electro_hydraulically driven loader which, because of its different attachments, may be used for a wide range of applications.

- The attachments are coupled to the basic machine via a quick hitch. By means of hydraulic multi-couplings a system change is comfortable and time-saving.
- Electrical equipment in flameproof design /ATEX conform or non-flameproof design

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



- side tipping loaders are suited for all loading works arising in underground operation. They are characterized by a simple, compact and easy to maintain design as well as by a high operational availability.

- The machines work with a low noise level. The hydraulics are designed for hardly inflammable pressure liquids or mineral oil.
- The operator's cab is designed in compliance with ergonomic guidelines. The assembly groups are made according to the unit construction principle and are easy to transport and may be quickly assembled.

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



Drilling Jumbo

- The single-boom drilling jumbo HDM 1 has an electro-hydraulic central drive, a hydraulic hammer for percussive drilling or drill drive units for rotary drilling and has been constructed for the preparation of blast hole and anchor drillings as well as for roof bolting.

- low and compact design, which permits the application in small roadway cross sections
- parallel automatic in horizontal and vertical plane for cross sections of roadways from 16 m² up to 46 m²
- two front supports for improving the stability
- modular design for easily assembling and dismantling the assembly groups and transport units.

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



HAZEMAG

Long Hole Drilling Machine

- Drill rigs of the TURMAG type series HLH 50 to HLH 300 may be applied for a multitude of drilling tasks, such as core drillings, exploration and degasification drillings.

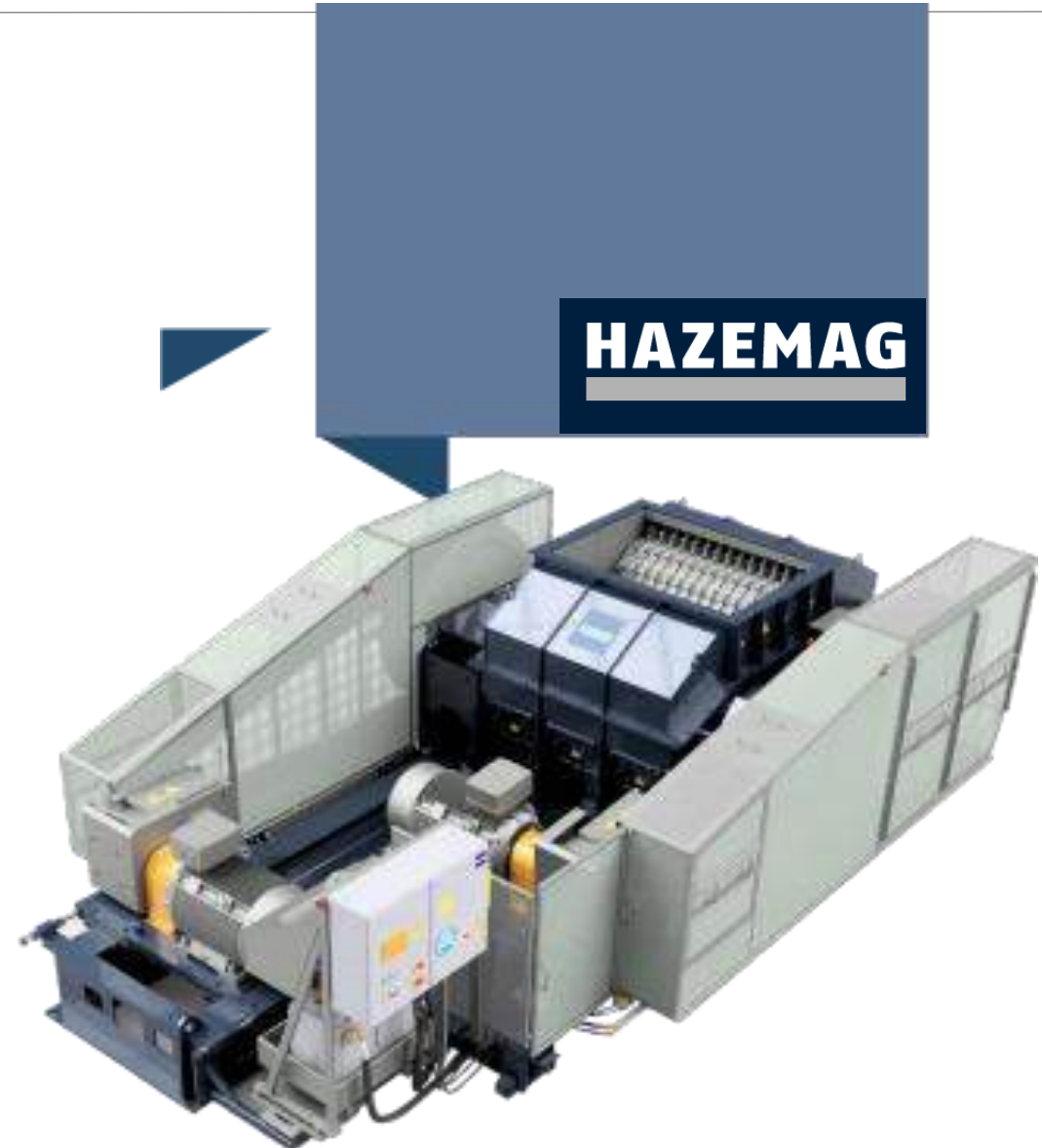
- Together with the drill rods and bits, which are tailored to the drill carriages as well as to the purposes, a high operating efficiency is guaranteed.
- Electrical equipment flameproof design / ATEX conform or non-flameproof design

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)

RollCrusher

High reduction ratio for the Cement & Aggregatdustry

Very high crushing degree of large rocks at high throughput rates . Generation of a product suitable for feeding vertical roller mills Choice of hydraulically-actuated impact apronsAlso available with heated impact aprons for wet and sticky feed materials



3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)

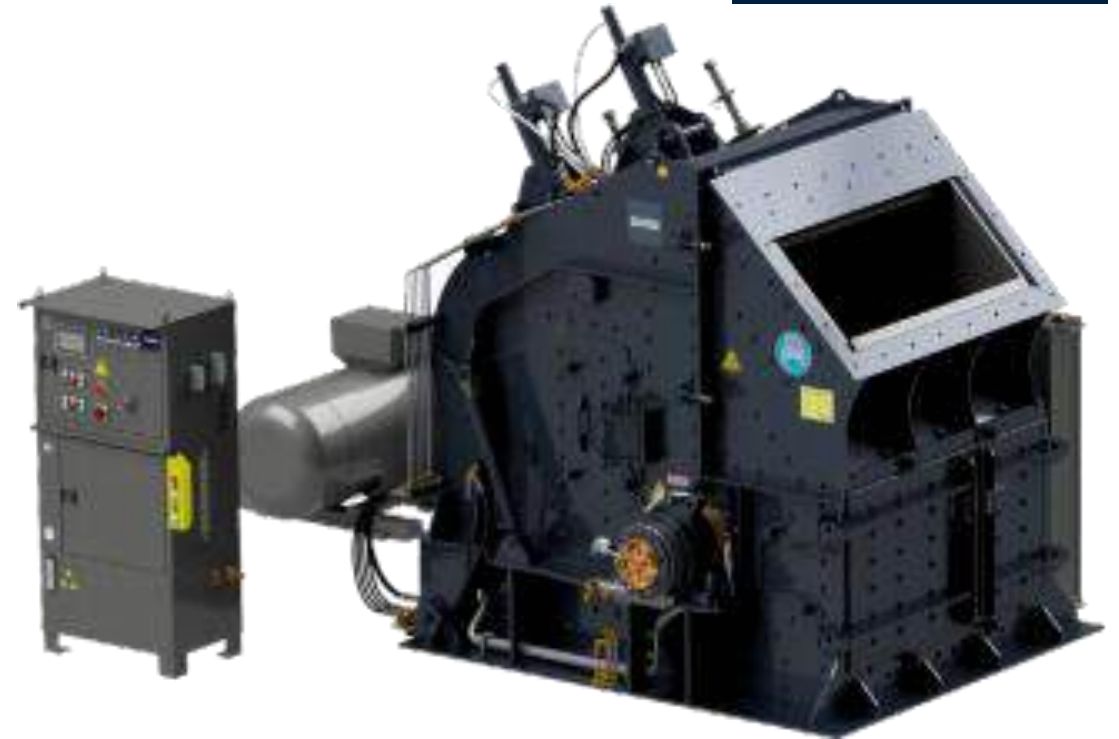


Primary Impact Crusher



High reduction ratio for the Cement & Aggregates Industry

- a. Very high crushing degree of large rocks at high throughput rates . Generation of product suitable for feeding vertical roller mills . Choice of hydraulically-actuated impact aprons
- b. Also available with heated impact aprons for wet and sticky feed materials



3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



HAZEMAG



Redefines secondary crushing technology
High Reduction Ratio for the Cement,
Recycling and Aggregates Industry
Reliable Production at up to 700 t/h while
utilising cost-efficient wear materials

Ease of operation and a consistent product
standard thanks to hydraulically – actuated
impact aprons. Also special designs, for
instance, for the salt industry With or without
grinding path

Secondary
Impact Crusher

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



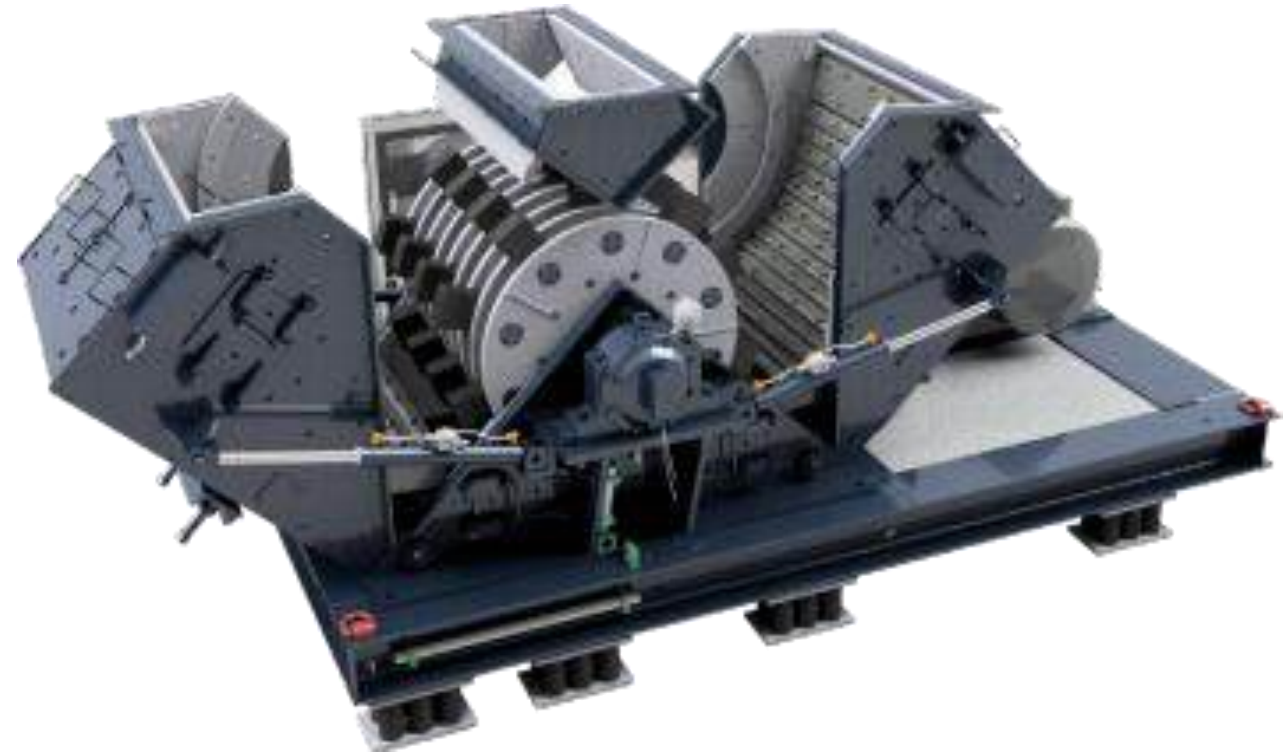
HAZEMAG

Hammer Mill

For secondary & tertiary crushing and grinding of soft to mediumhard materials

Ideally suited for the production of mechanical sand Grinding path or grinding wall heating systems to suit the wide range of applications

.Adjustable grinding path



3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



HAZEMAG

Primary Center Sizer

Crushing at low speed with high torque

Comminution is realised by compression and shearing induced by fixed crushing rolls

Two inward rotating crushing rolls

Continuous-flow crushing

Cubical product with minimal fines

Flexibility: exchangeable wear caps

Adjustable gap setting between the crushing roll and breaker bar



3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



HAZEMAG

Horizontal Impact Crusher

Ready to use complete crushing plant

- Combination of single Impact Roll Crusher and heavy duty Chain Conveyor
- Crushing in horizontal material flow directly on site
- Feeding at grade, no foundation required
- Accepts oversized feed material
- Mobility options: stationary, semi mobile & mobile
Re-adjustable impact elements & easily exchangeable wear parts



3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)



HAZEMAG

Apron Feeder

For material extraction from feed hoppers & material conveyance

- High capacity conveying
 - Variable speed for optimum plant utilisation
 - Two chain strands on heavy-duty track rollers
- Combined track rollers & heavy rubber blocks to absorb the material impact of the hopper feeding
- Slide rails are mounted under the apron feeder pans along the length
- Sprocket segments allow replacement without taking off or splitting the chain



3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)

HAZEMAG
allair®



Benefit

- completely dry working air-pulsed jig with high efficiency
- separation of different primary and secondary raw and waste materials
- throughput rates of 20 - 100 t/h per machine- particle size ranges from 50 mm (2") to less than 1 mm (16 mesh)
- fully automatic operation with analog measurement of bed depth

Advantages

- High efficiency, dry density separation
- Sulphur and ash reduction of coals without moisture gain
- No need for process water, clarified water or water purification
- No fines dewatering
- no slurry generation
- simple permit requirements
- high productivity
- large feed size range
- high capacity
- low capital and operating costs
- Reliability and easy to operate

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)

Applications:

Sand, ore, coal, slag,
heavy mineral sands

Advantages

- Classifying, separating, thickening and desliming in one step
- high efficiency
- high capacity in a single unit
- online or offline production of customized sand
- wide ranges in feed solids concentration
- low maintenance
- low energy costs

Benefit

- fluidized bed separator for the production of 3 classified products
- fluidized bed with autogenous heavy media
- particle size ≤ 4 mm (3 / 16")
- throughput rates of up to 2000 m³/h (8000 gpm) in a single unit
- separation of light particles from fine materials
- fully automatic process control
- no moving parts
- production of customized sand by blending online or offline



allair®
HAZEMAG

3. Manufacture in Mining industry (*Hazemag-Subsidiary of Sinoma*)

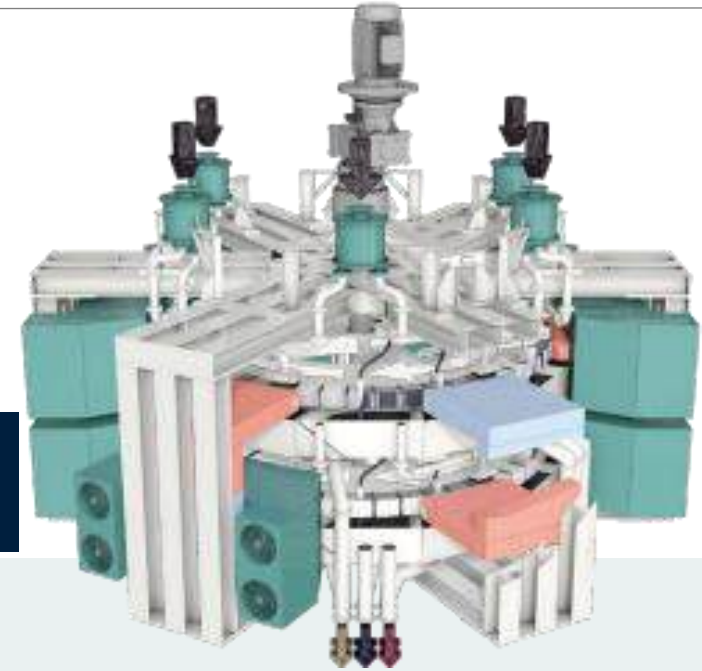
Applications:

Iron ore (hematite, goethite), ilmenite, chrome ore, manganese ore, tungsten ore and other paramagnetic resp. feebly magnetic minerals

Advantages

- High efficiency
- high flexibility
- sharp separation
- Reliability

allair®
HAZEMAG



Benefit

- Wet High Intensity Magnetic Separator with a maximum of flexibility
- separates ores and other paramagnetic and feebly magnetic minerals with a particle size up to 3 mm.
- the high gradient magnetic field is independently adjustable for each rotor through AC / DC converters.
- the rotor speed is adjustable from 3 to 7 rpm through a frequency in- verter.
- throughput rates of 6 to 1.400 t / h per machine.

3. Main Project Performance

3.1 Main Mine Project

Over the years, main mine projects selected in the national green mine list

Serial Number	Project Name	Construction Site
1	Chengxian Qilianshan Cement Co. Niuxiashan Limestone Mine	Cheng County, Gansu Province
2	Dujiangyan Lafarge Cement Company Limited Dajianbao Limestone Mine	Dujiangyan, Sichuan Province
3	Sichuan Easun Cement Group Co.	Emei, Sichuan province
4	Hejiashan Limestone Mine, Shimen County (Shimen Conch)	Shimen, Hunan Province
5	TCC (Chongqing) Cement Co., Ltd. Niubiqi - Shuijingpo Limestone Mine for Cement Use	Chongqing Hechuan
6	Walnut Hill Limestone Mine for Cement, Mukong Township, Jinsha County, China	Jinsha County, Guizhou Province
7	Shidian County Xiaoguan City Limestone Mine	Baoshan, Yunnan Province
8	Xueshan Tuff Mine of Qianyang Conch Cement Co.	Chiyang, Shaanxi Province
9	Liquan county scold dry town top day cement with gray rock mine	Li Quan, Shaanxi Province
10	Daigou Cement Limestone Mine	Pingliang, Gansu Province
...	...	...

3. Main Project Performance

Green Mine Project

Sichuan Easheng Cement Group Corporation

Easheng Mining Field——National Green Mine

Location	Emei,Sichuan province
Construction	2010
Capacity	13 million tons/year
Extraction method	Open-pit mining
Transportation modes	Road development, automobile transportation



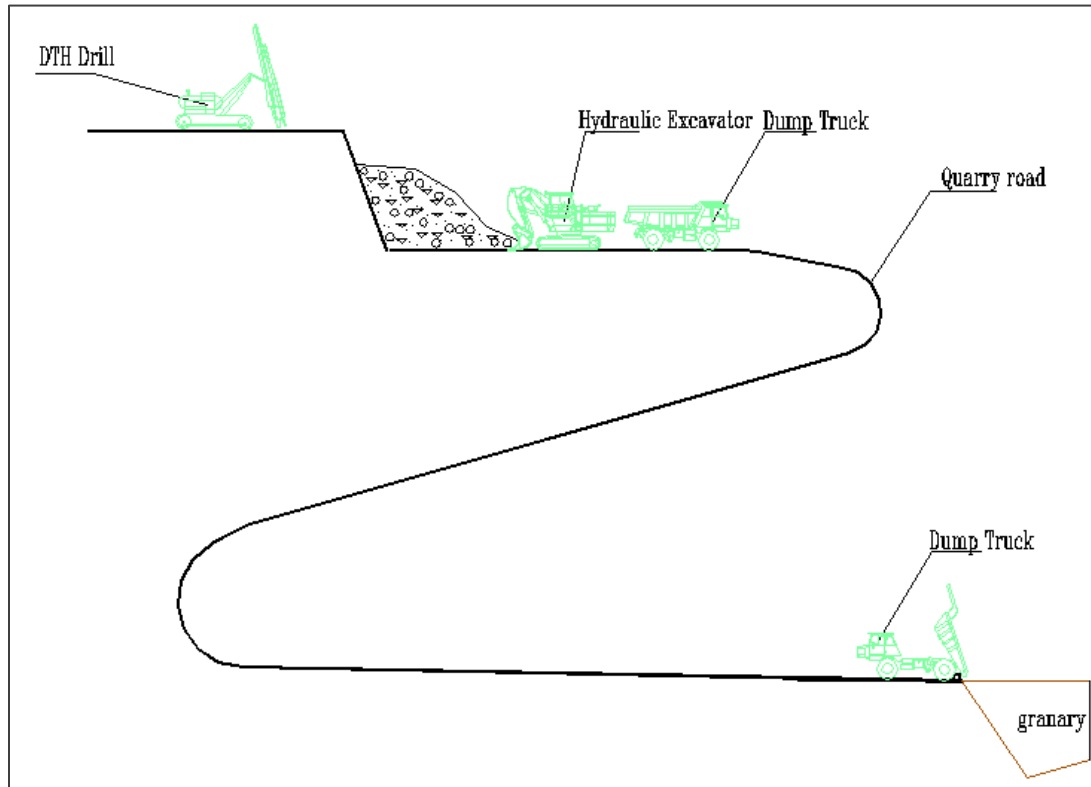
Quality online monitoring system

4. Main Project Performance

Green Mine Project

Sichuan Easheng Cement Group Corporation

Easheng Mining Field——National Green Mine



Process Flow Chart

Minimum mining elevation	950m
Highest mining elevation	1376m
Height of steps	15
Width of safety platform	4m
Width of sweeping platform	8m
Slope angle of working steps	70°
Minimum working platform width	40m
Minimum working platform length	90m
Final slope angle	38.6°

4. Main Project Performance

Green Mine Project



Video Surveillance System

Chengxian Qilianshan Cement Co. Niuxiashan Limestone Mine——National Green Mine

Location Cheng County, Gansu Province

Construction 2009

Capacity 4.5 million tons/year

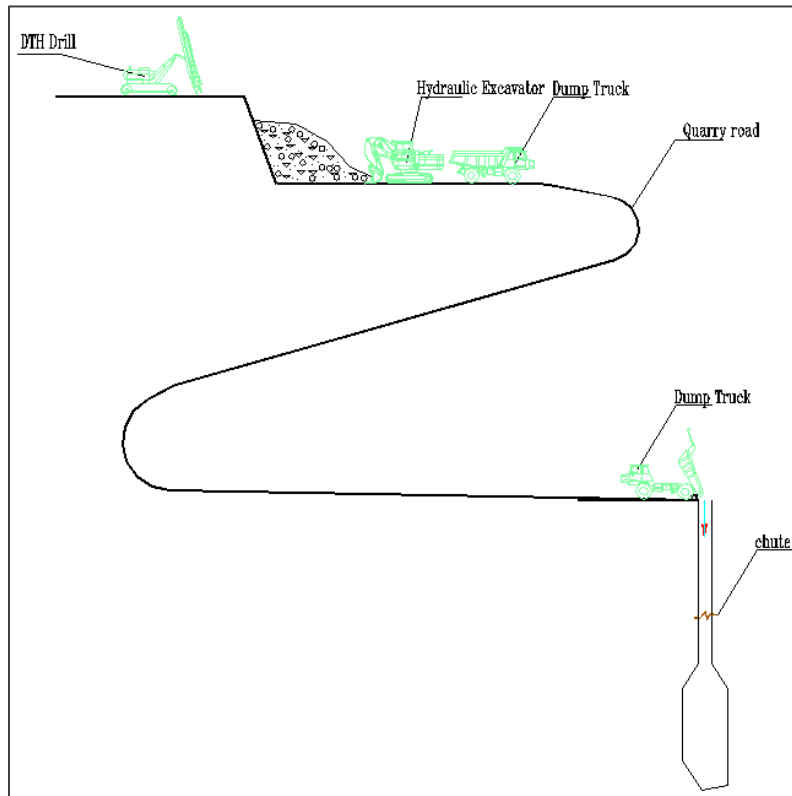
Extraction method Open-pit mining

Transportation modes chute refuge (mining)

3. Main Project Performance

Green Mine Project

Chengxian Qilianshan Cement Co. Niuxiashan
Limestone Mine——National Green Mine

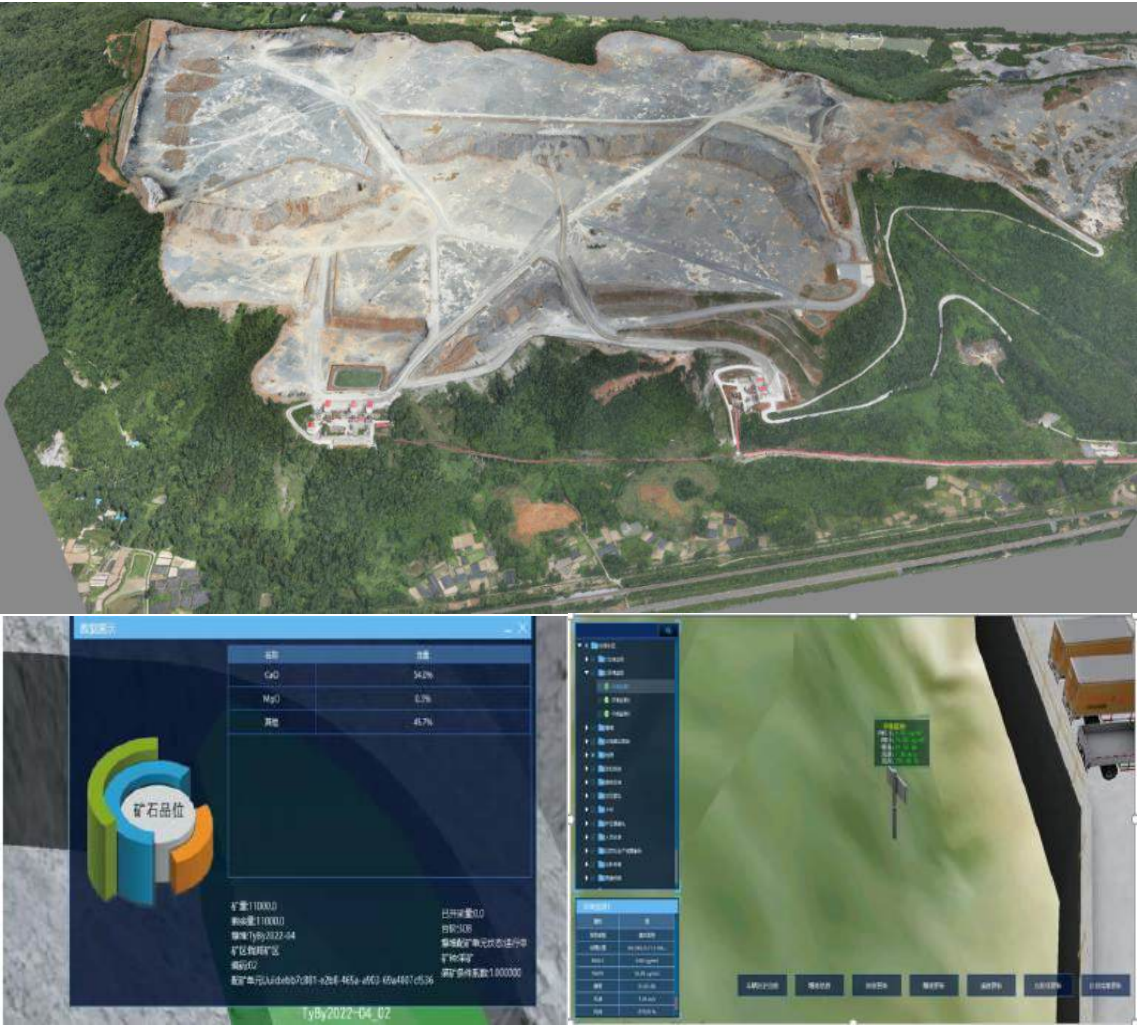


Process Flow Chart

Minimum mining elevation	1160m
Highest mining elevation	1370m
Height of steps	15
Width of safety platform	4m
Width of sweeping platform	6m
Slope angle of working steps	75°
Minimum working platform width	40m
Minimum working platform length	9120m
Final slope angle	45°

4. Main Project Performance

Green Mine Project



Hushan Limestone Mine of Anhui Tongling
Conch Cement Co. —National Green Mine

Location	Tongling, Anhui Province		
Construction	2010		
Capacity	13 million tons/year		
Extraction method	Open-pit mining		
Transportation modes	Road development,	automobile	transportation

4. Main Project Performance

Green Mine Project-Chuzhou Zhonglian Mine

Construction in July 2019
and included in the Green
Mine List in January 2021

- Intelligent and accurate identification of explosive ore grade, intelligent ore blending, real-time dynamic monitoring of the production process



4. Main Project Performance

Green Mine Project-Pingyin mountain mine



National green mine

The score is 976 points

The Shandong Provincial government has organized many government departments and mining enterprise personnel to the site to learn and observe, requiring the province to promote.

4. Main Project Performance

China Building Materials Ruichang New Material Project

- ❑ Using the chute tunnel development system, the scale of mining 30 million tons/year of sand and stone aggregate.
- ❑ 15 months to complete the aggregate processing area site leveling and mine infrastructure , including two chute, three adits, two crushing chambers, etc.
- ❑ Diameter of the chute is 8m, net width of the crushing chamber is 15m with net height 25m and net length is 65m.
- ❑ The total length of tunnel and chute excavation is 4.3km.



4. Main Project Performance

Jilin Shulan Molybdenum Mine Project

- ❑ The mining area is located in the small town of Shulan City, the mining area is 2.8km², the ore reserves are 230 million tons, the mine design service life is 22 years
- ❑ In February 2023, the mine stope infrastructure will be completed, and 14 mining platforms have been formed, with a production capacity of 9.4 million tons/year and a total annual mining and stripping amount of 80 million tons/year

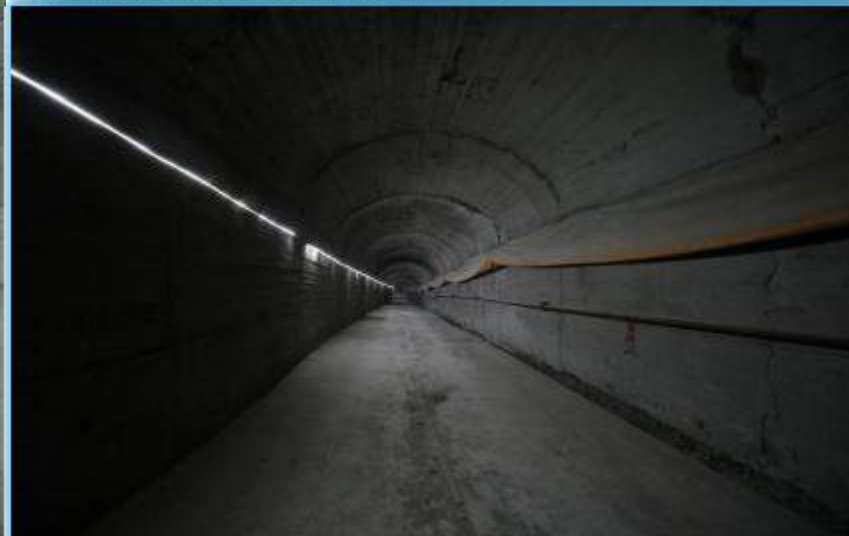


4. Main Project Performance

Jilin Helong underground and open-pit iron mine project

❑ Located in Yanbian, Jilin Province, production scale: underground iron ore 780,000 tons/year, open pit iron ore 1 million tons/year, stripping 7 million tons/year

❑ The three ore groups I, IV and VII are all underground mining. I mine group adopts the tunnel development type, with a production scale of 150,000 tons/year; IV mine group adopts shaft development mode, with production scale of 330,000 tons/year; VII Mine group adopts the ramp development mode, and the production scale is 300,000 tons/year.



4. Main Project Performance

Marble project in Kintekanger, Laos

- ❑ Mining area: 10km²
- ❑ Type: Marble ore
- ❑ Scale: 1 billionm³, output 47,000m³/A



BOM Iron ore project in Liberia

- ❑ Mining area: 87.4km²
- ❑ Type: : Iron ore
- ❑ Scale: 3 million t/A



4. Main Project Performance

Yun Nan Weishan Aggregate project (limestone)

- ❑ Located in Weshan, Yunan Province, production scale: underground iron ore 5,000,000 tons/year
- ❑ adopts the impact Crusher, with a production scale of 1500tph
- ❑ 5km belt conveyor with 2km tunnel construction



4. Main Project Performance

WuxuanMarble project in GuangXi

- ❑ Mining area: 8km²
- ❑ Type: Marble ore
- ❑ Scale: 0.9 billionm³, output 47,000m³/A



Crushing Station

- ❑ Crusher: Hammer Crusher
- ❑ Type: : Mable
- ❑ Scale: 2800t/h



4. Main Project Performance

Dujiangyan Lafarge Cement Company
Limited Dajianbao Limestone Mine

Location Dujiangyan, Sichuan Province

Construction 2002

Capacity 9.8 million tons/year

**Extraction
method** Open-pit mining

**Transportation
modes** chute refuge (mining)

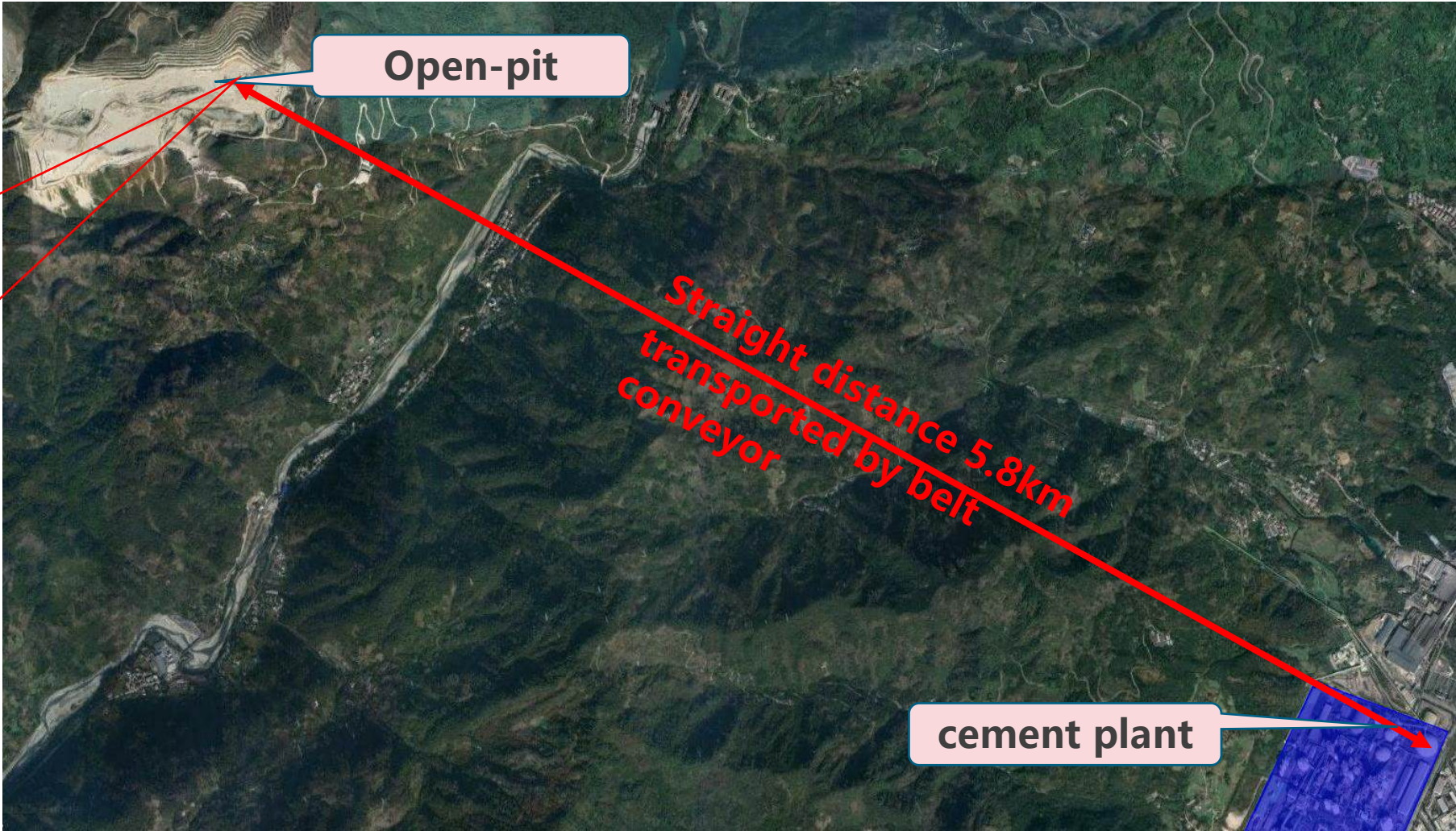
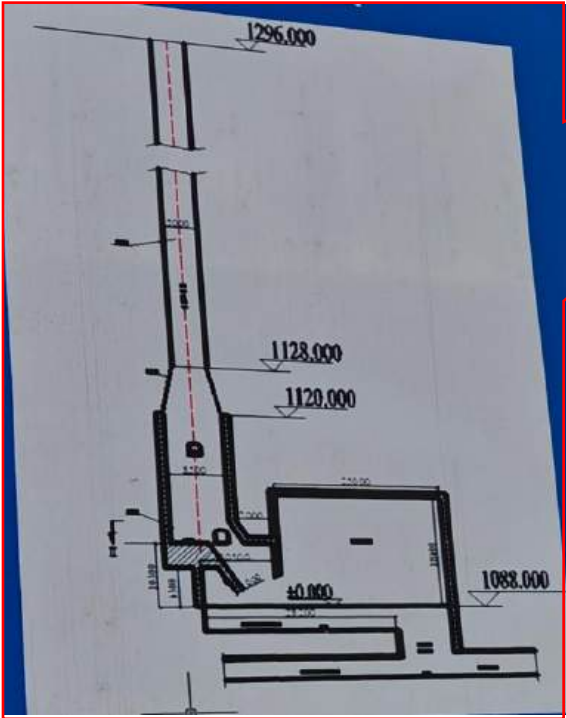
**Our institute assisted them to build the
intelligent mine system**



3D Visualization Control Platform

4. Main Project Performance

□ Lafarge Limestone Mine



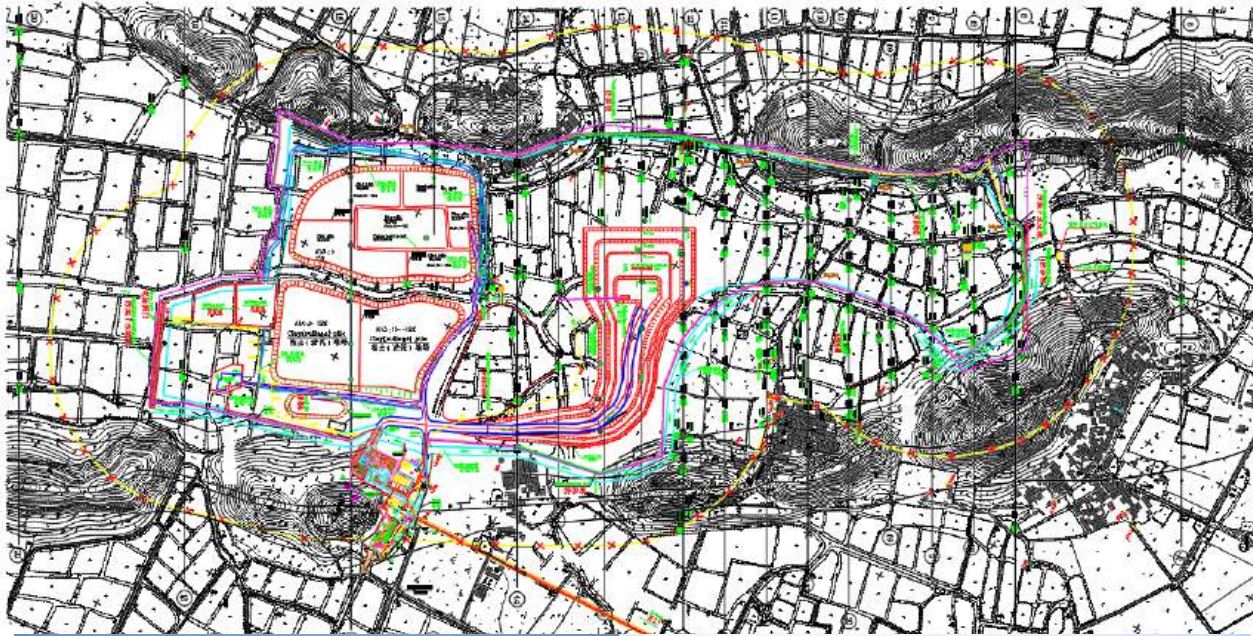
4. Main Project Performance

□ Lafarge Limestone Mine



The long belt of the mine is about 6.4km long and the tunnel section is 2.8km long (the longest tunnel section is about 1km). The belt traverses steep terrain and is difficult to construct. Today, even after the 7.9 magnitude "Wenchuan earthquake" in 2008, the system is currently functioning well.

4. Main Project Performance



Heidelberg Guangzhou Mine

Location Guangzhou, Guangdong Province

Construction 2003

Capacity 2.74 million tons/year

Extraction method Open-pit mining

Transportation modes Road development, automobile transportation

4. Main Project Performance

Xuanwei Phoenix Hill 2 million t/a limestone mine project

Location

Xuanwei, Yunnan Province

Construction

2012

Capacity

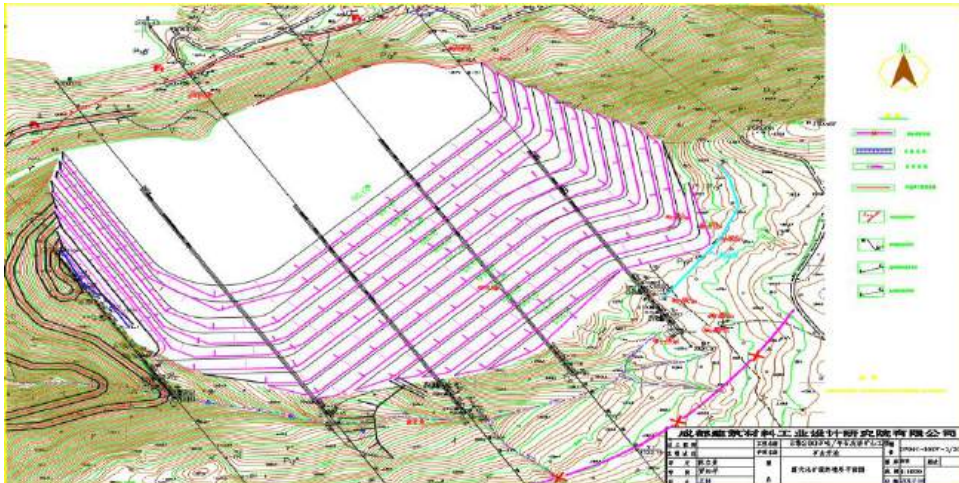
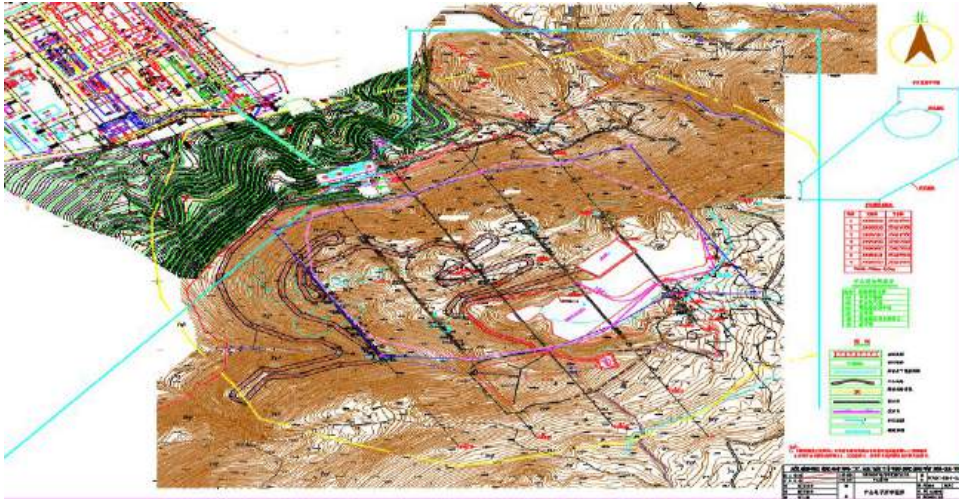
2 million tons/year

Extraction method

Open-pit mining

Transportation modes

Road development, automobile transportation



4. Main Project Performance

4.2 Long belt transportation system

Serial Number	Project Name	Belt Parameters	Construction Site
1	Kunsteel Jiahua Limestone Mining Project in Ermu Village	10.5km,1000mm,1000t/h	Kunming, Yunnan Province
2	Dazhou Conch 2×4500t/d Production Line Phase I Project	5.8km, 1200mm, 1650t/h	Dazhou, Sichuan Province
3	Dujiangyan Lafarge 6.4km limestone long belt transportation system	6.4km, 800mm, 800t/h	Doujiangyan, Sichuan Province
4	Qinghai Qilianshan Cement Long Belt Transportation System	4.7km, 1000mm, 1350t/h	Xining, Qinghai Province
5	Yunnan Fuyuan 1.1km limestone long belt transportation system	1.1km, 1200mm, 1800t/h	Fuyuan, Yunnan Province
6	China Resources Wuxuan 4km Limestone Long Belt Transportation System	4km, 1200mm, 2600t/h	Wuxuan, Guangxi Province
7	Huizhou Gepu 10km Limestone Long Belt Transportation System	10km, 1600mm, 3800t/h	Huizhou, Guangdong Province
8	Wangcang Sichuan Coal Cement 5km long belt transportation system	5km, 1200mm, 2200t/h	Guangyuan, Sichuan Province
9	Chongqing Conch 10.5km Conveyor System	10.5km, 1400mm, 3300t/h	Zhong county in Chongqing
.....			

4. Main Project Performance

4.2 Long belt transportation system

Typical project: Dujiangyan Lafarge 6.4km limestone long belt transportation system



4. Main Project Performance

4.2 Long belt transportation system

Typical project: Dujiangyan Lafarge 6.4km limestone long belt transportation system



3. Main Project Performance

3.2 Long belt transportation system



Qinghai Qilianshan Cement Long Belt Transportation System

Zhibula Copper Polymetal 11.47 km Long Belt Project



3. Main Project Performance

3.2 Long belt transportation system

Yunnan Fuyuan 1.1km limestone long belt transportation system



Hongshi 37 km Long Belt Project

3. Main Project Performance

3.2 Long belt transportation system

Typical project: CR Wuxuan 4km limestone long belt transportation system



3. Main Project Performance

3.2 Long belt transportation system

Typical project: Huizhou Gepu 10km limestone long belt transportation system



3. Main Project Performance

4.2 Long belt transportation system

Typical project: 5km long belt transportation system of Wangcang Sichuan Coal Cement



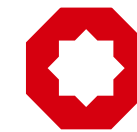
4. Main Project Performance

4.2 Long belt transportation system

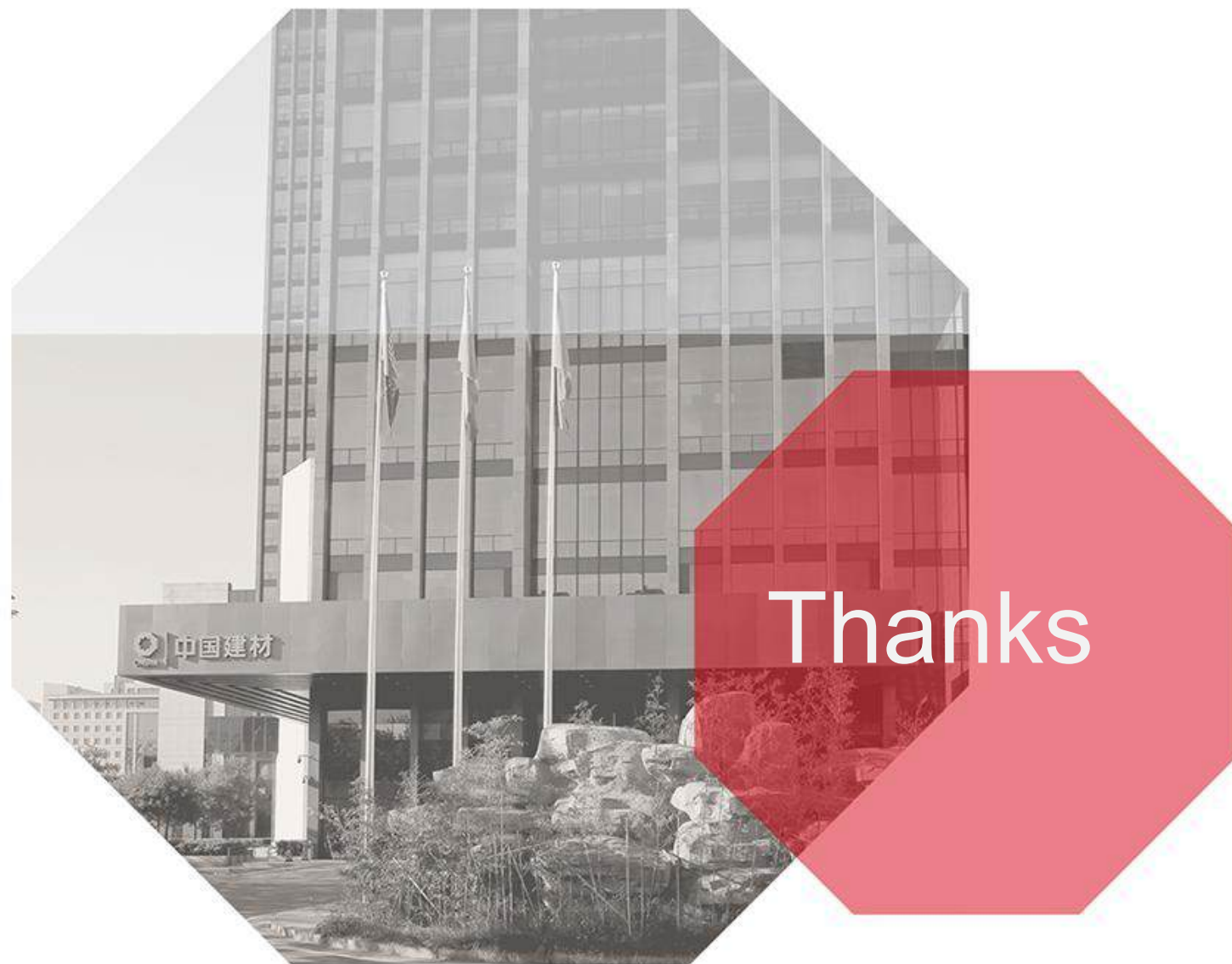
Pipe belt conveyor Project-
Tagaung Taung, Myanmar



This conveying system is build in with asynchronous generators. The down ward conveying sections can generate power and feed back to the system.



中国建材



Innovation

Performance

Harmonious

Responsibility