

선군혁명총진군



# FOREIGN TRADE

OF THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

JUCHE 106  
(2017)

4



# Nutritious Jam

The nutritious jam developed by the Pyongyang Taehung Trading Company is much favoured as an ideal health food in the 21st century for its excellent functions in eliminating from the human body waste matters that cause intractable diseases and aging, and enhancing its physiological activities.

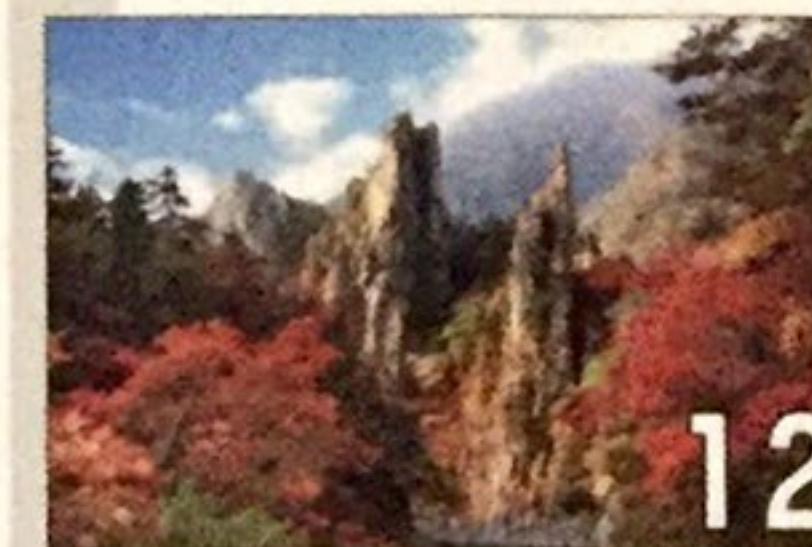
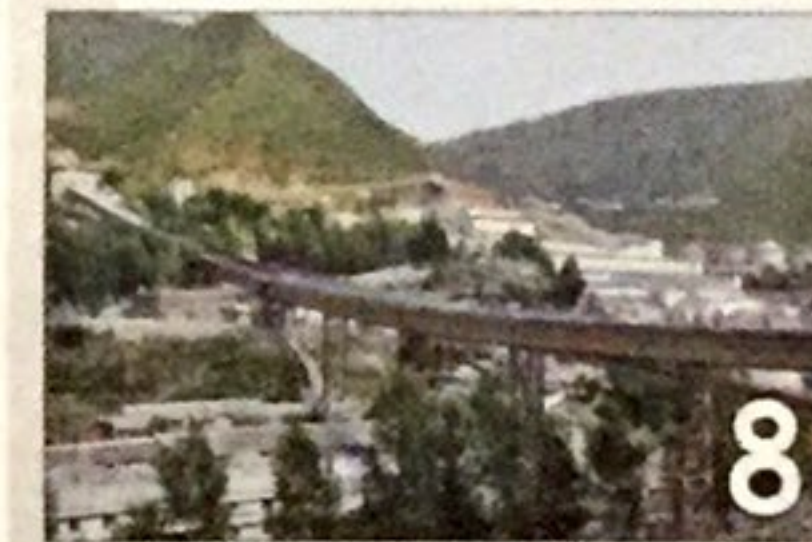
Mainly composed of animal high protein, peptide, amino acid, vitamins, mineral matters and trace elements, it is very good for skin care, weight gain, brain development and visual improvement and also for the prevention and treatment of neuralgia, dizziness and systemic pain caused by senile arteriosclerosis, hepatic dysfunction and tuberculosis.



Pyongyang Taehung Trading Company  
 Add: Taesong District, Pyongyang, DPR Korea  
 Tel: 850-2-341-5903 Fax: 850-2-381-4627

## Contents

2. Laudable Outcome of Self-Reliance and Self-Development
6. Building of a Sci-Tech Power and Trade in Technology
7. Precise and IT-based Measuring Instruments
8. Komdok Mining Complex
10. Myohyang High-Tech Company
12. Mt Kumgang, Celebrated Mountain in Korea
14. Tanchon Smeltery
16. Naenara-brand Rolling Stock
18. Pyongyang Dental Hygiene Supplies Factory
20. Taeon Sinthae Joint Venture Company
22. Planetary Ball Mill
22. Compound Ceramic Cutting Tool
23. Portable Inversion-type Plasma Cutter



23. Ozonizer for Water Sterilization
24. Phyongjin Bicycle Joint Venture Company
26. Law of the Democratic People's Republic of Korea on Import and Export of Technology
28. Songnim Export Processing Zone
29. Nano-gold Chitosan Solution
30. Pyongyang Construction Trading Corporation
32. Intelligent Fire Monitor
32. Intelligent Electric Regulating Valve



Editor: Kim Son Ok  
 Kim Sin Hyok  
 Photo: Kang Chol Song  
 Jon Son Il  
 Yun Kwang Hyok

The quarterly journal 'Foreign Trade of the DPRK' is available in English, Russian, French, Spanish, Chinese and Japanese versions.

Please visit <http://www.korean-books.com.kp>

Published by the Foreign Trade Publishing House

Add: Socheon-dong, Sosong District, Pyongyang, DPR Korea



THE CHAMBER OF COMMERCE OF THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

P.O.Box 89  
 Add: Jungsong-dong, Central District, Pyongyang, DPR Korea  
 Tel: 850-2-3813926  
 Fax: 850-2-3815827  
 E-mail: micom @ solbank.net.kp  
 E-mail: micom @ star-co.net.kp



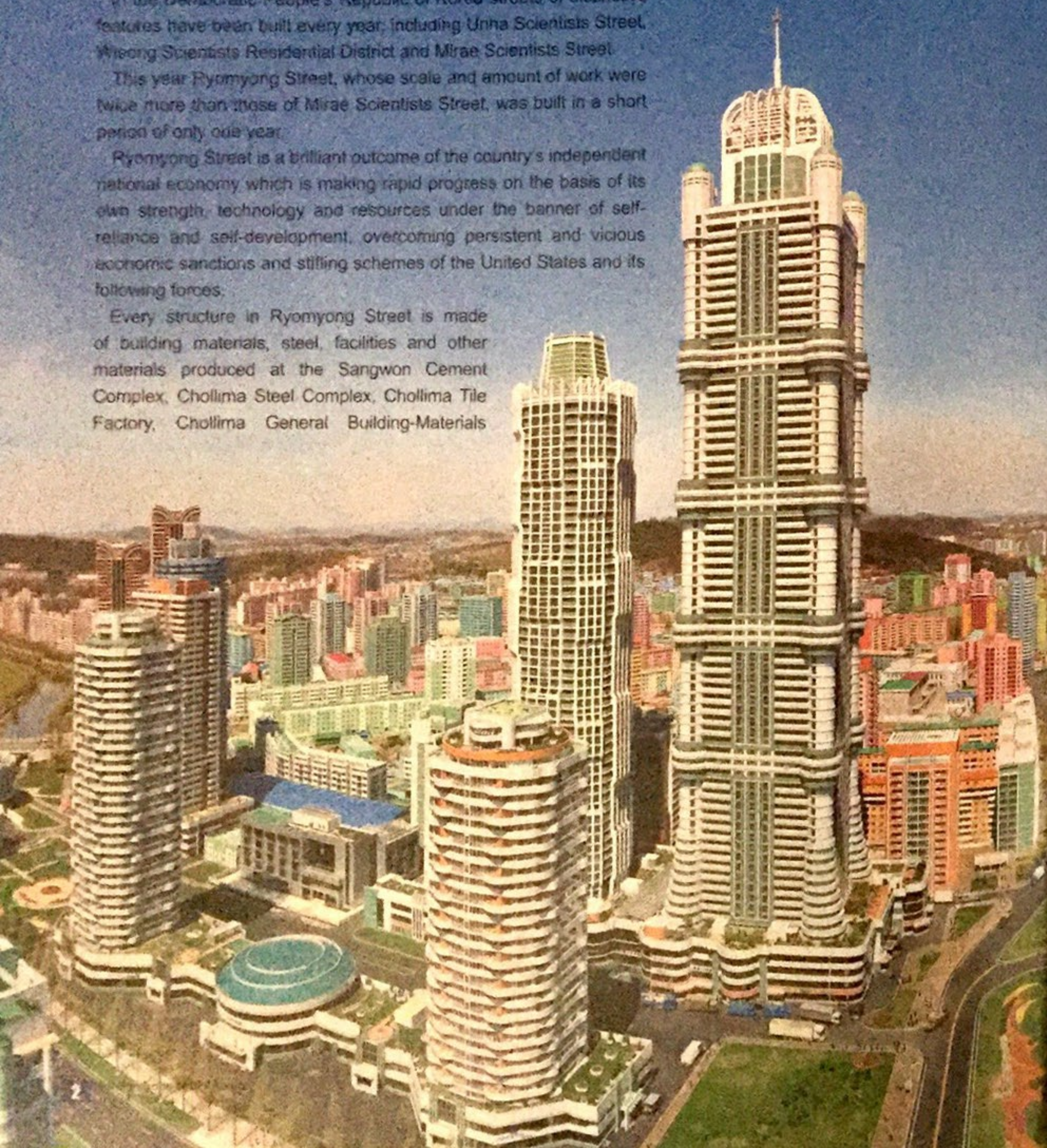
# Laudable Outcome of Self-Reliance and Self-Development

In the Democratic People's Republic of Korea streets of distinctive features have been built every year, including Unha Scientists Street, Wirong Scientists Residential District and Mirae Scientists Street.

This year Ryomyong Street, whose scale and amount of work were twice more than those of Mirae Scientists Street, was built in a short period of only one year.

Ryomyong Street is a brilliant outcome of the country's independent national economy which is making rapid progress on the basis of its own strength, technology and resources under the banner of self-reliance and self-development, overcoming persistent and vicious economic sanctions and stifling schemes of the United States and its following forces.

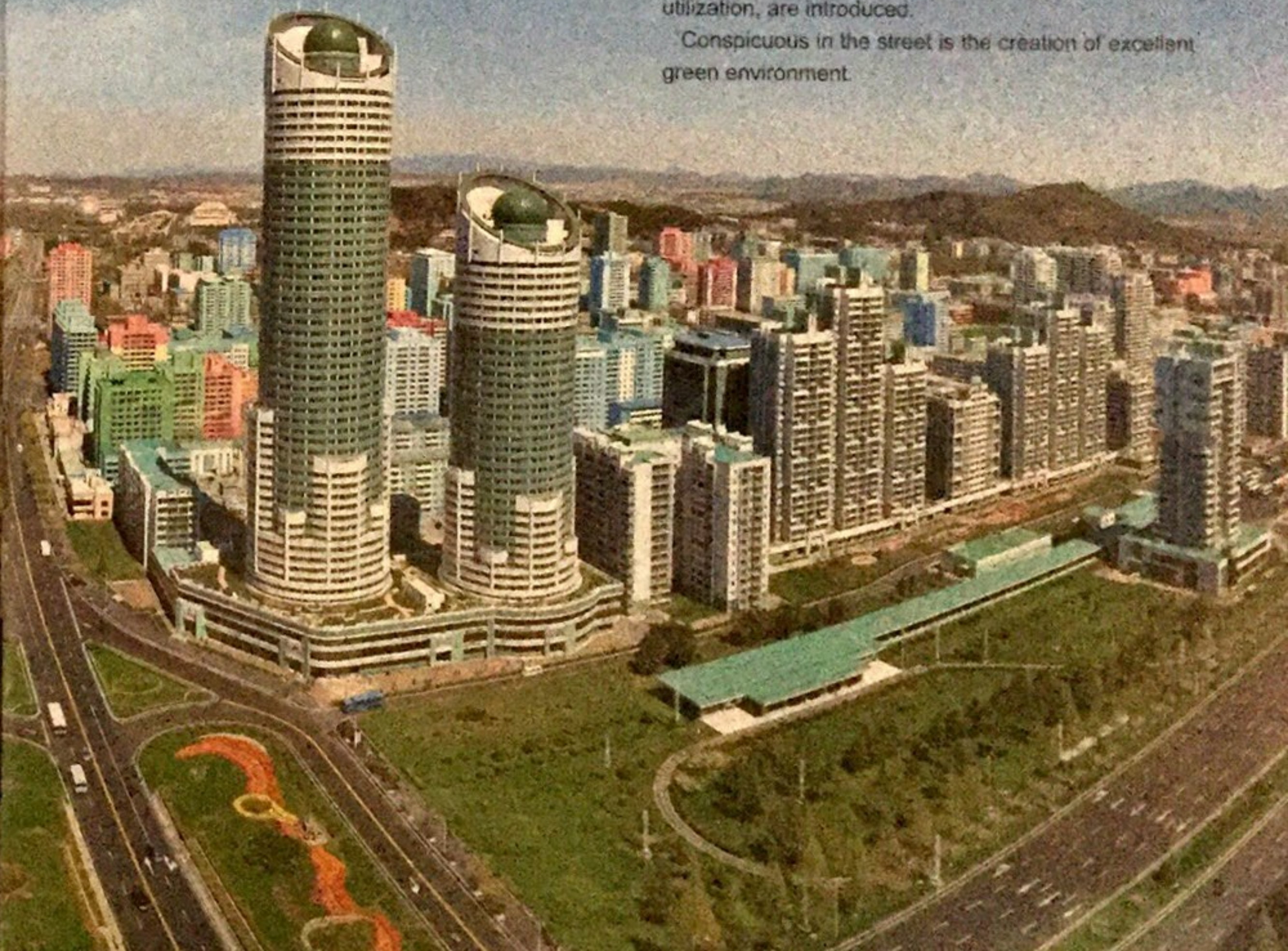
Every structure in Ryomyong Street is made of building materials, steel, facilities and other materials produced at the Sangwon Cement Complex, Chollima Steel Complex, Chollima Tile Factory, Chollima General Building-Materials



Factory, Taean Friendship Glass Factory, and Taean Electric Appliances Factory. Locally-developed high-tech materials and new technologies are also applied to the construction.

The street occupies a wide area of over 90 hectares with over 4,500 flats in 44 sky-scraping and multi-storied blocks, more than 40 public buildings including nurseries and kindergartens that were newly built, and 70 odd apartment and public buildings that were facelifted. It is flawless in a formative and artistic way as cosy and magnificent architectural groups present a perfect harmony. It is also an energy-saving and green street in which renewable energy resources and greening techniques are employed at a high level.

Good-looking and cosy buildings are laid out in the direction of the Kumsusan Palace of the Sun where the great leaders are preserved in their lifetime appearances while skyscrapers being concentrated in the direction of the tower to the immortality to the great leaders at the Ryonghung Crossroads. Apartment buildings present different appearances. And there is a building looking like a full-blown beautiful flower with petal-shaped



plattbands on the walls forming a grove around a hall.

Passive solar heating system is introduced to use sunlight through skylight for heating the concrete walls and floors painted to absorb solar heat as much as possible, and the walls are designed to save heat as well. This technology helps provide 65% of energy to heat rooms facing south and 30% for those in the east and west.

A sunlight guiding technique is applied for natural lighting at car parks, shops and other establishments under the ground.

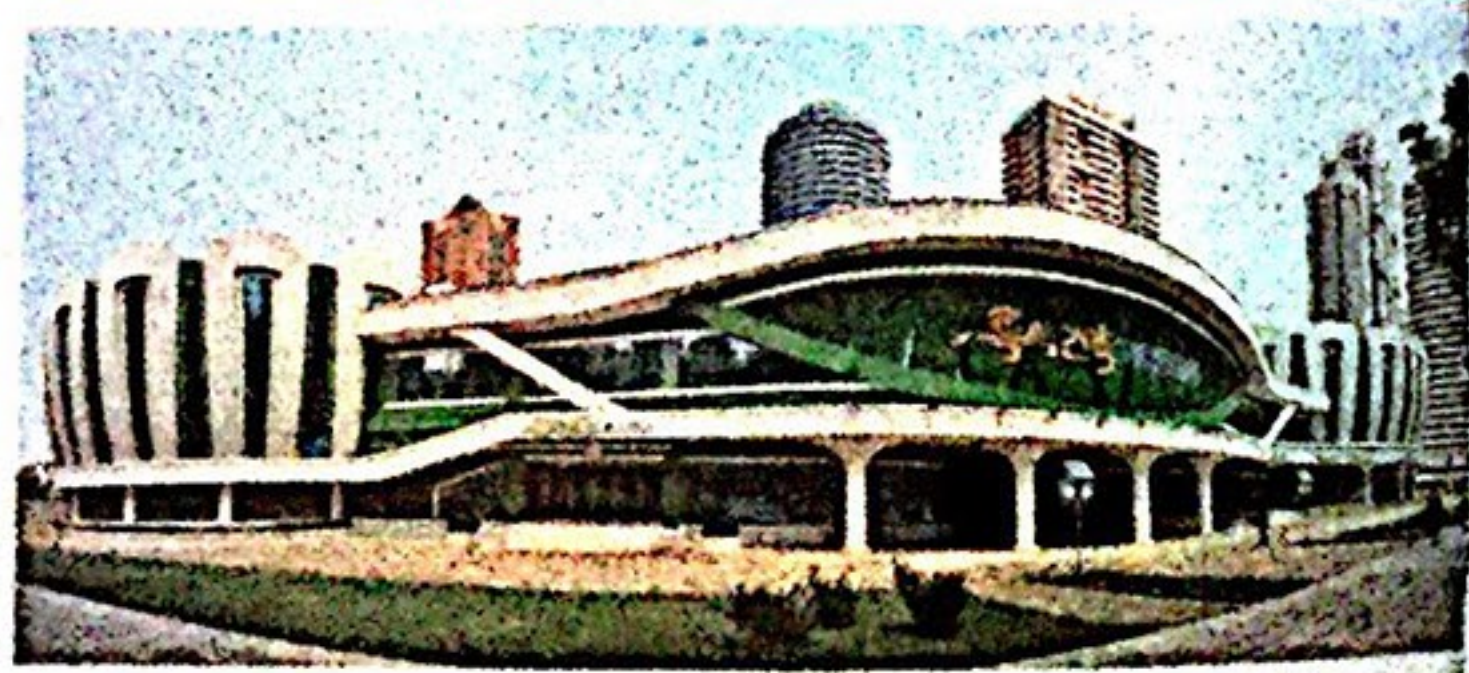
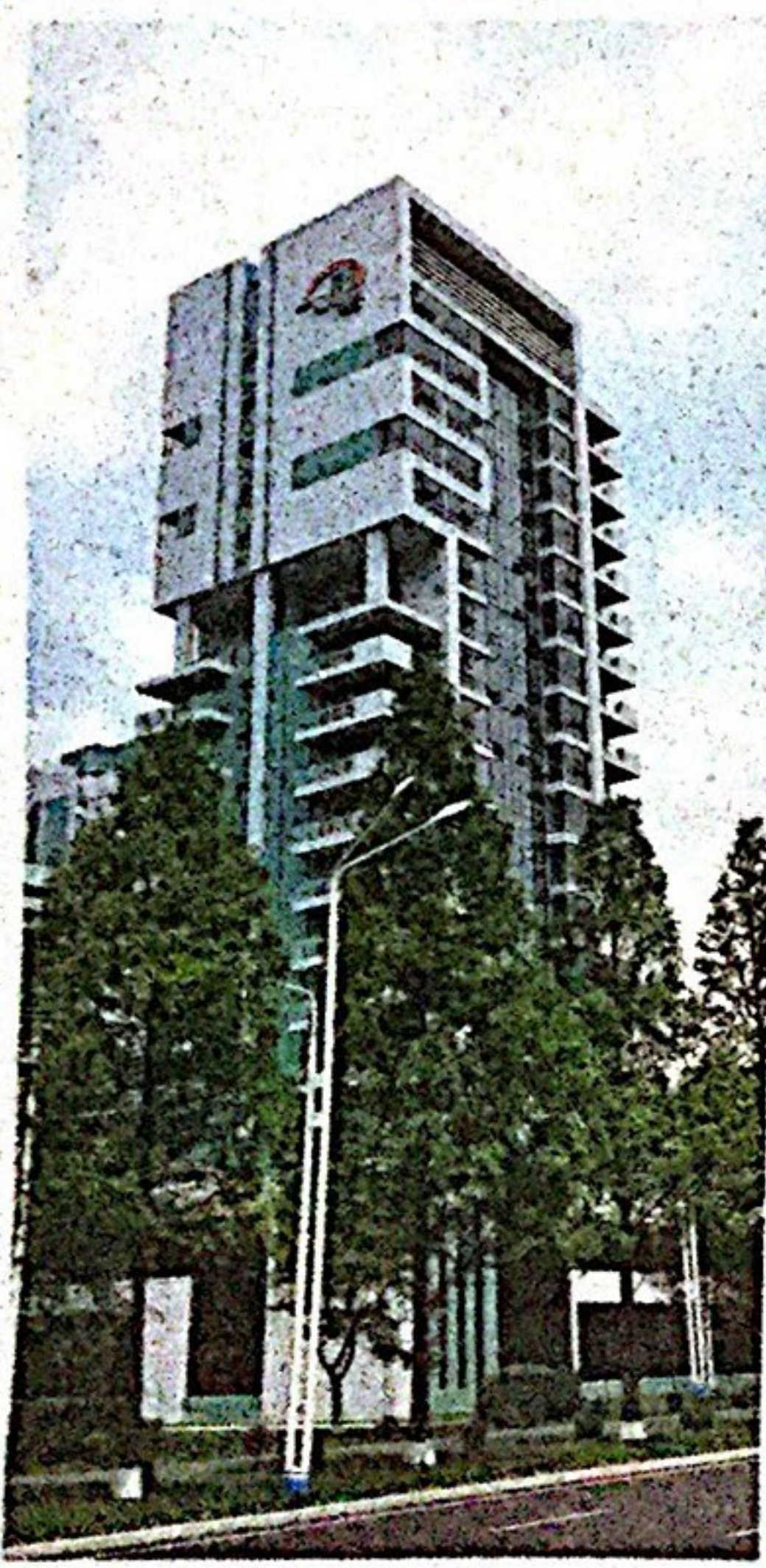
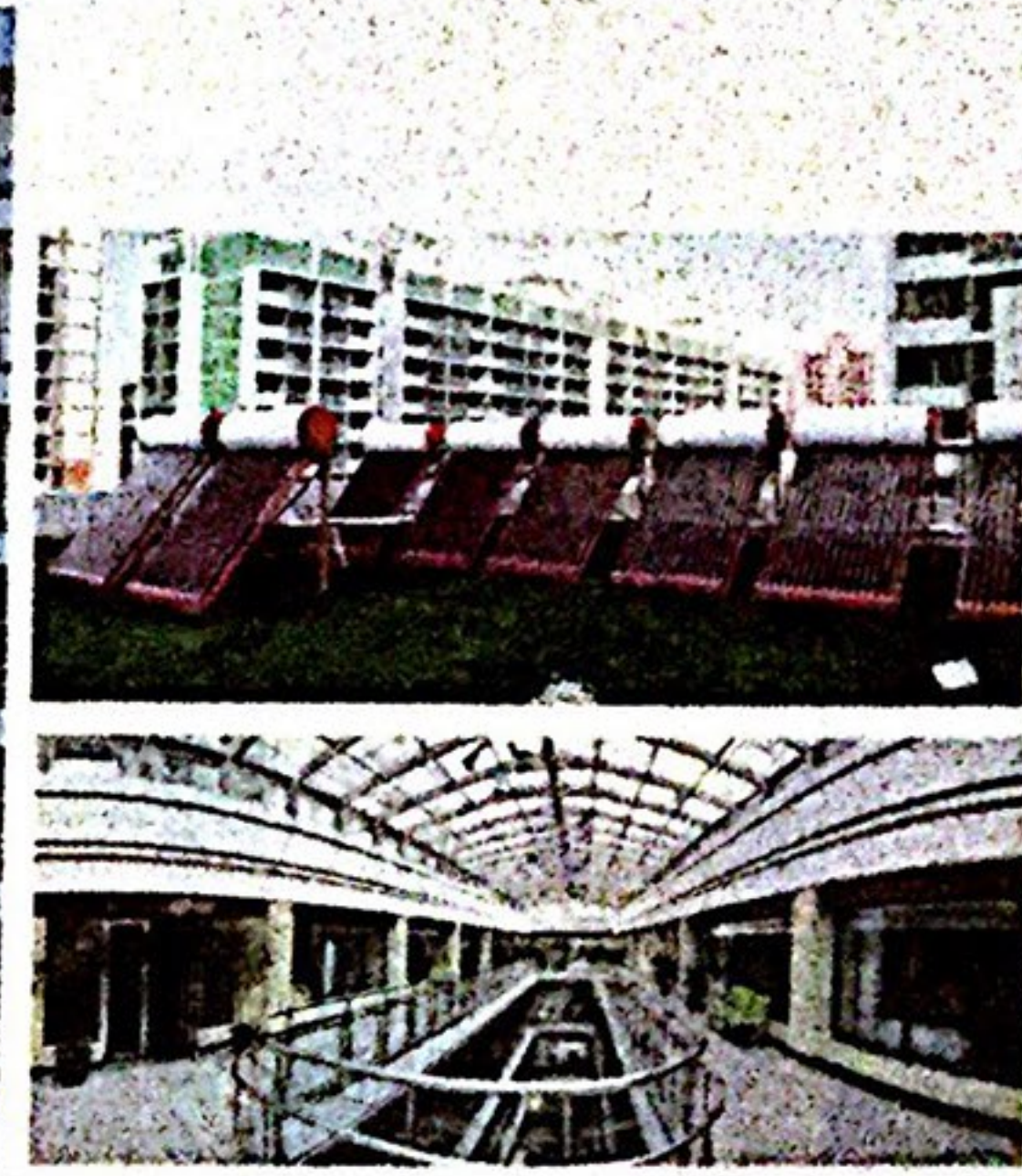
The inside walls of the houses, nurseries and kindergartens as well as the walls of spacious rooms are either papered or painted with air-conditioning materials.

Hydroponic greenhouses laid out on the building roofs are equipped with the rainwater recycling system to provide necessary water for culture solution, irrigation, cleaning and others. The system satisfies over 80% of water needed for irrigation and 50% for the maintenance of the greenhouses.

A number of advanced technologies, such as thin-layered roof greening and geothermal-waste heat utilization, are introduced.

Conspicuous in the street is the creation of excellent green environment.





Over 200 000 sq metres in area are covered with more than 30 000 trees and flowering plants in 56 species, 200 000 odd flowers including over 4 000 roses, and green lawns. Besides, greening techniques are introduced to roofs and surface walls of the apartment and public buildings accounting for 75% of the former and 70% of the latter in building areas. Flowering stands set up in the verandahs of the flats are about 32 kilometres in length.

All the structures in the street are coloured green and white to simulate an environment of a forest dense with Korea larches and white birches.

The residential areas are also finely laid out with recreational establishments and facilities, including children's parks, volleyball, badminton and tennis courts, roller rinks and others, covering a total area of 57 000 sq metres.

Under the wise leadership of the respected Supreme Leader Kim Jong Un and the banner of self-reliance and self-development, the DPRK is making a rapid progress, giving fuller play to the might of the independent national economy and continuously working out world-startling miracles.





# Building of a Sci-Tech Power and Trade in Technology

The Workers' Party of Korea has put forward a grand strategy of building a sci-tech power whose overall science and technology are at the most advanced level in the world and where science and technology play the leading role in ensuring the rapid development of all other sectors, including the economy, national defence and culture.

To this end, the government of the DPRK has set a goal of taking an honourable place among the ranks of the most advanced nations in the world in the near future in terms of overall scientific and technological strength, and is making great efforts to develop cutting-edge technologies with a world-class competitive edge.

Thanks to its positive efforts, the country's science and technology has registered rapid progress so as to make production lines remote-controlled, intelligent and fully automated and establish hi-tech industries aimed at raising the cutting-edge science and technology to the world level.

It is channelling considerable efforts into developing such core, basic technologies as IT, nanotechnology and bioengineering, along with such pivotal and beneficial fields as new materials and energy, space and nuclear technologies. At the same time, it is focusing on the research projects with existing foundations and clear prospects and furthering achievements made in them.

Technological development in many fields, including mechanical, metal, thermal and materials engineering, is being sped up, and a lot of sci-tech achievements are made in improving the performance of NC machine tools, generators, and electric rotary and large mining machines. Besides, such products applied with hi-tech achievements as electronic goods, software, pharmaceuticals, bioengineering products, special alloy products of new materials, and health foods have been developed, making a contribution to consolidating the foundations for the building of a sci-tech power.

The abovementioned successes serve as solid assets for further expanding trade in technology with other countries.

It is the consistent trade policy of the DPRK government to give priority to the strengthening of the independence of the national economy while promptly adapting advanced sci-tech achievements of other countries to its specific conditions and exporting similar achievements of the country.

During the past decades the DPRK government has successfully built the self-supporting national economy with a multi-faceted and comprehensive economic structure, and on this basis has constantly expanded the trade in technology with other countries.

At present the government sets it as an important strategy to increase the proportion of the trade in technology so as to improve the country's trade structure and visible balance. It also encourages scientific research institutes, universities and colleges to make new sci-tech achievements recognized on the international market and adopt the others' achievements to suit its specific conditions.

It is actively conducting the trade in technological licence by joining WIPO and other international organizations, and strengthening the protection system of the intellectual property right in conformity with the international standards. It is also intensifying international ties and cooperation in this field, thereby creating an environment and conditions favourable for conducting brisk trade activities in licensing technical patents and know-hows as well as technological services.

The DPRK's patent agencies register new sci-tech inventions, trademarks in production and sales, and other successes in the fields of education and arts and literature as technical patents, know-hows, trademarks, copyrights and related rights, and protect them while carrying them on international scientific and technological journals and renowned periodicals and lists. And, on its basis, the country's scientific and technological research institutes, universities, trade companies, and enterprises are actively conducting trade activities in technological licensing and expanding their scope and volume.

The patent agencies, in close collaboration with foreign counterparts,

are providing satisfactory legal environment for domestic units to properly conclude contracts related to licensing and using foreign technical patents, know-hows, trademarks and so on and implement them.

Laws and regulations on the trade in technology stipulate preferential terms that encourage foreign technical research organs and patent-holders to export cutting-edge science and technology to the DPRK as well as domestic organizations to introduce them. In the meantime, the patent rights protection organs ensure that the infringement upon foreign patent-holders' interests and violation of the contracts are strictly forbidden by law, thus maintaining credit-worthiness.

The government of the DPRK encourages all the sectors and units of the national economy to actively engage in trade in technology by hosting various exhibitions, shows, joint seminars every year.

National exhibition of inventions and new technologies and national sci-tech festival are held at the Sci-Tech Complex on an annual basis, and international trade fairs are successfully held in Pyongyang and Rason Economic Trade Zone.

Technical presentations, academic seminars, sci-tech exhibitions and consultations, advertisement and joint research for new technology development in the fields of natural energy, machinery, electronics, public health, architecture, agriculture, livestock farming and others are briskly conducted with other countries to promote mutual cooperation and exchange.

The government of the DPRK will constantly collaborate with foreign countries in sci-tech cooperation and trade in technology, thereby making an active contribution to the worldwide sci-tech development and bringing about greater successes in the building of a sci-tech power.

*Jo Chang Jun,  
Candidate Academician, Professor  
and Doctor, chief of the trade  
economics section at the University  
of National Economy*

## Precise and IT-based Measuring Instruments

### Multi-point digital temperature relay

The instrument displays the thermal measurements of the media simultaneously obtained at several points of thermal equipment including electric boilers, heating furnaces, drying kilns and electrothermal furnaces. Automatic adjustment of the temperatures when they reach the preset ones is also available under computer control.

#### Technical specifications:

Measuring temperature: -50 – 1 650°C  
Measuring error: 0.5%  
Power: AC DC 85 – 265V  
Frequency: 30 – 60Hz  
Working temperature and humidity: 0 – 80°C, 70%

### Digital thermo-pressure meter

It measures and displays the temperature and pressure of steam (superheated and saturated), and sends the measurements to the computer.

#### Technical specifications:

Measuring temperature of saturated steam: 100 – 263°C  
Measuring pressure of saturated steam: 0 – 5MPa  
Measuring temperature of superheated steam: 100 – 500°C  
Measuring pressure of superheated steam: 0 – 10MPa  
Measuring error: 0.5%  
Temperature sensor: Pt100

### Digital relay for oil and water level

It measures and displays the liquid level in tanks (high and low pressure) filled with petroleum and water, and automatically controls the levels by means of computer control.

#### Technical specifications:

Sensor height: 500 – 2 000mm  
Measuring level: 0 – 2 000mm  
Resolution: 10 – 50mm  
Working voltage: AC DC 85 – 265V  
Frequency: 30 – 60Hz



### Kanghung Technology Trading Company

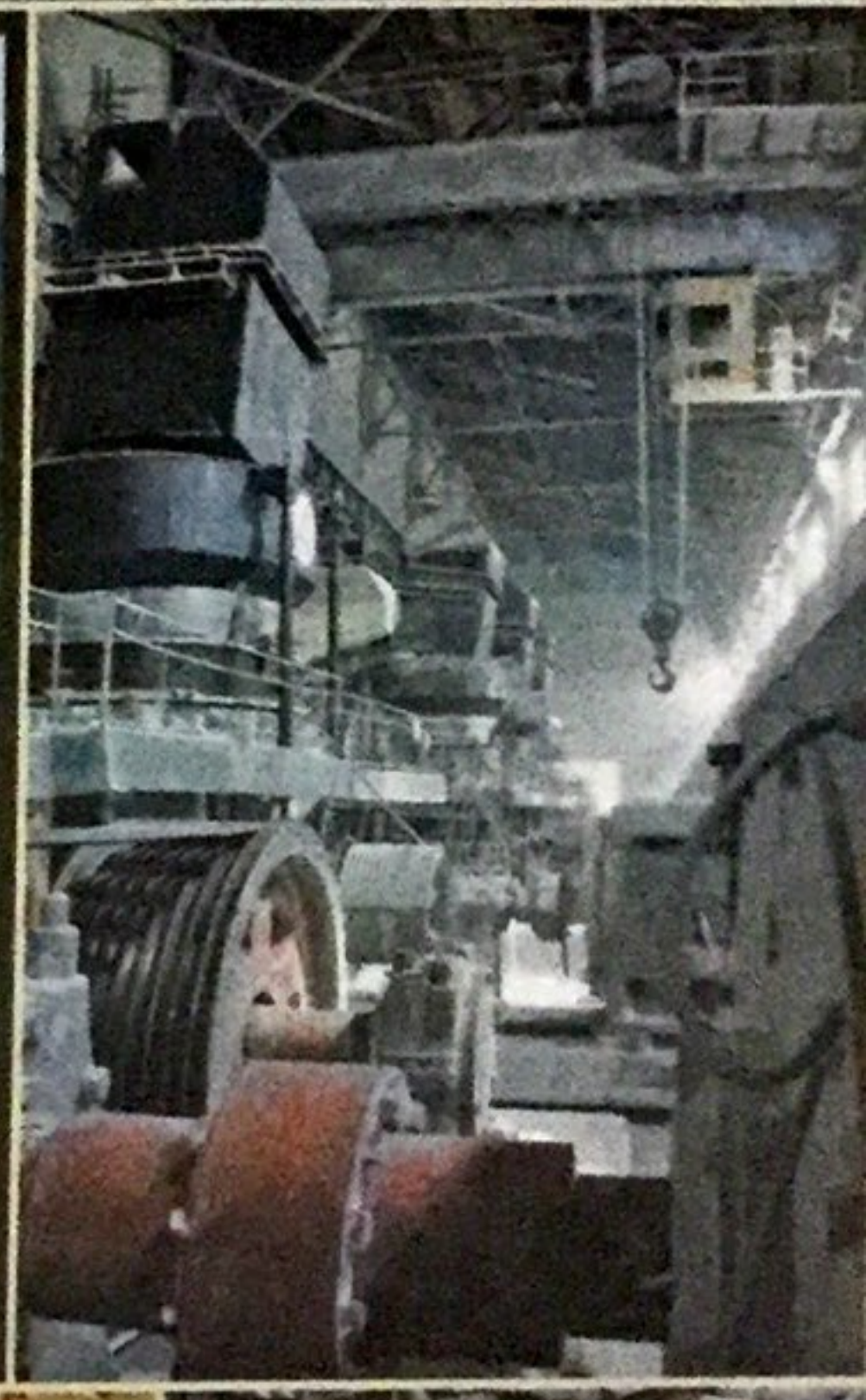
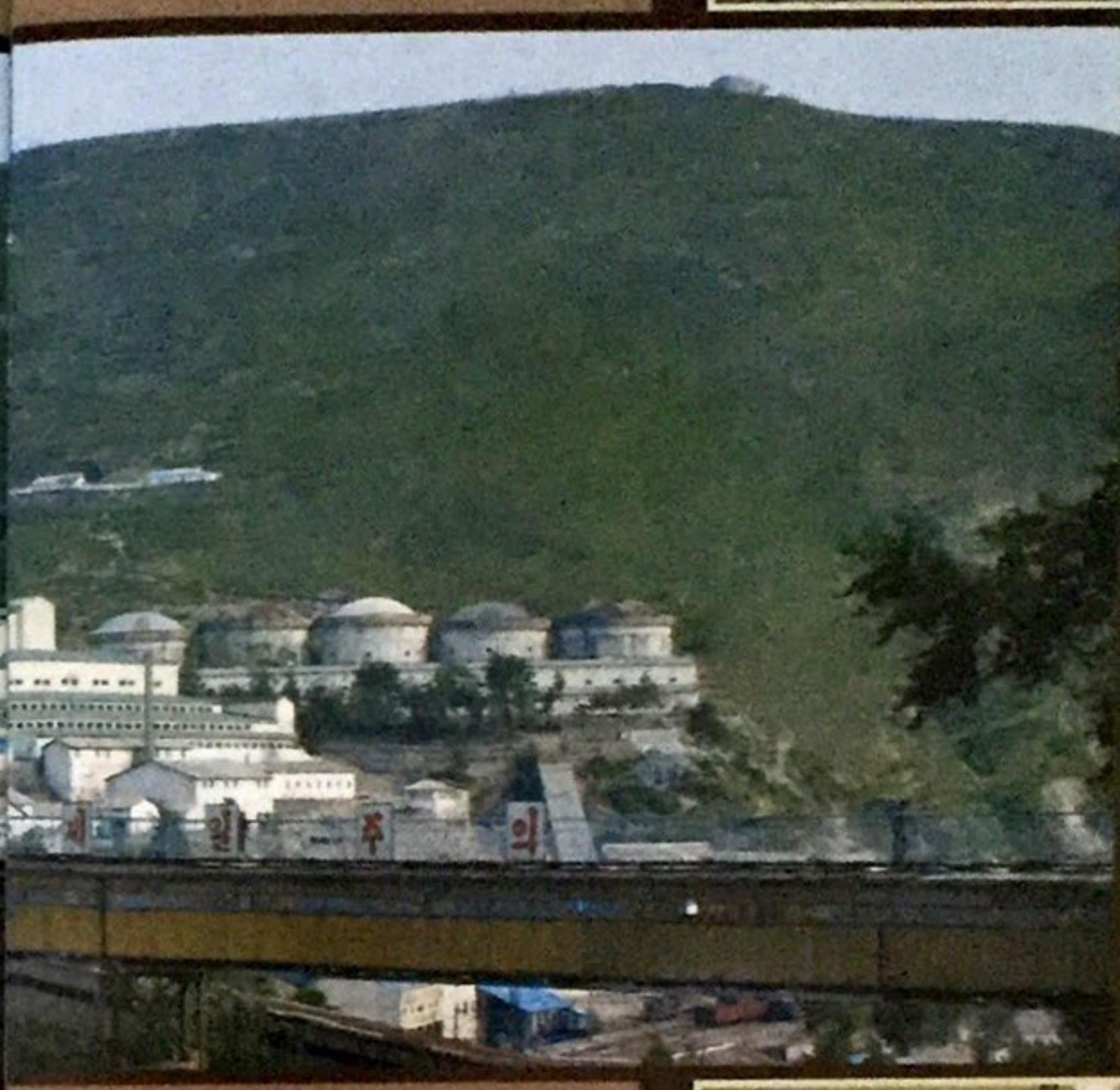
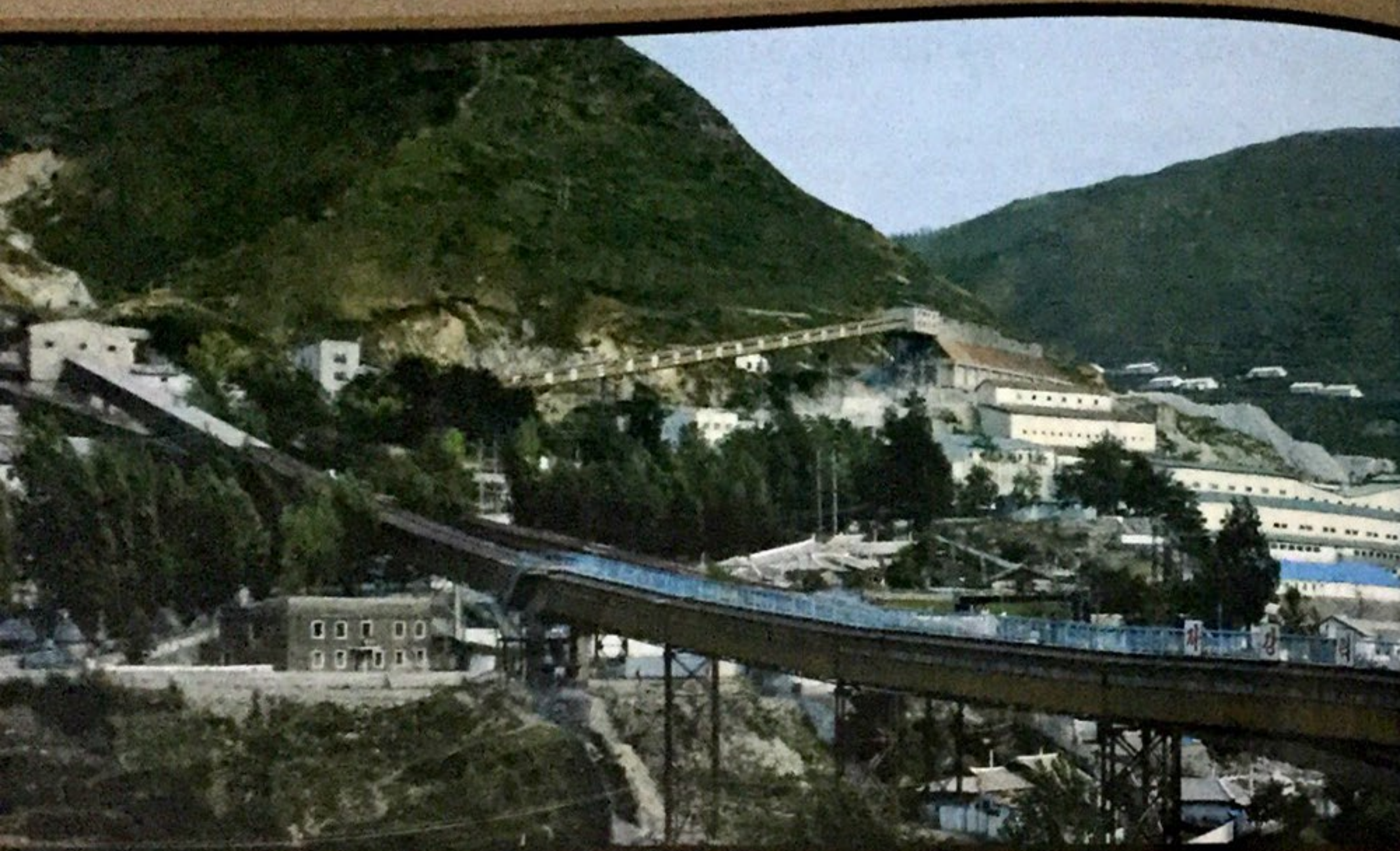
Add: Sosong District, Pyongyang, DPR Korea

Tel: 850-2-18111-341-8544

Fax: 850-2-343-6633

E-mail: arirangnp@star-co.net.kp





# KOMDOK

## Mining Complex

The Komdok Mining Complex is a large nonferrous metal producer taking a lion's share in the DPRK's nonferrous metal industry.

The complex has established an integrated production and control system and worked out a scientific strategy for the operation and management, thereby normalizing production at a high level.

Composed of deep and upper sections and having completed its pit structure with various sizes of shafts, the complex is engaged in mass mining by means of horizontal layer mining method.

It also renovated several transporting shafts in the deep section and completed major chutes in the upper section, thus cutting and transporting a great amount of ores.

Its active introduction of advanced technologies has put ore-crushing and dressing on the modern basis

and effected technical renovation of air-compressors, and its equipment with such modern facilities as self-propelling excavating frame, electric loaders and others raised the rate of mechanization in the pit work.

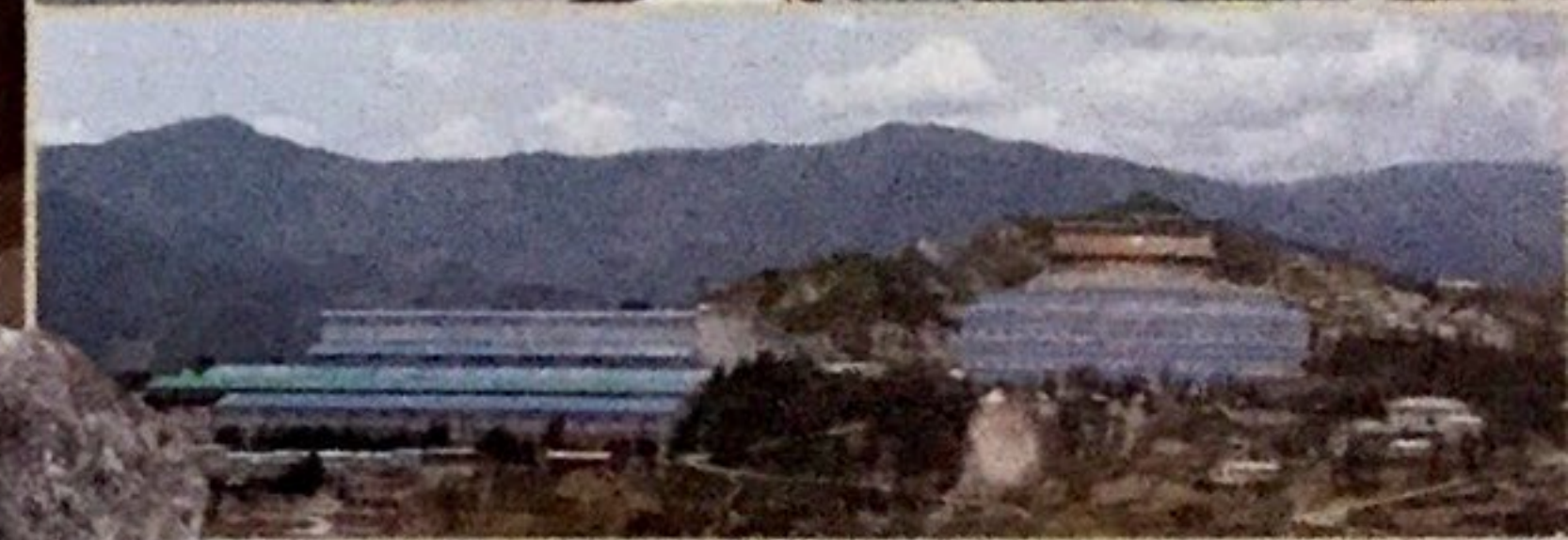
The modernization of flotation and sorting systems at the Dressing Plant No. 3 helps further increase the amount of ore processing and raise the actual extraction rate of lead and zinc.

While giving definite precedence to prospecting and tunnelling, the complex pushes ahead with the project of developing a new mine with high-grade ores so as to increase ore production.

As it has large concentrated ore deposits of lead and zinc with high grade as well as high efficiency of investment, the Komdok Mining Complex attracts investors at home and from abroad.

### Korea Zinc Industry Group

Add: Phyongchon District,  
Pyongyang, DPR Korea  
Tel: 850-2-18111-381-8166  
Fax: 850-2-381-4034  
E-mail: [ksbepy@silibank.net.kp](mailto:ksbepy@silibank.net.kp)





# Myohyang High-Tech Company



The Myohyang High-Tech Company is a production base of solar energy goods and generating systems.

It has a strong team of competent personnel for designing and developing electric power and electronic products, and maintains close contact with relevant scientific research organs in designing and manufacturing modules, electric power converters and switchboards for various purposes, all applied with cutting-edge technologies.

Equipped with laser microtome, EL tester, solar simulation tester, module gauge, wafer tester, packaging machine, frame-assembling machine and so on, the company ensures prompt production and high quality of goods.

It manufactures and sells on order over ten kinds of highly efficient modules, solar-powered controllers, inverse converters, multi-purpose power converters, and power switchboards.

The module with 19% of converting efficiency and 50~330W of rated power has a life span of over 25 years, produces rated capacity for 15 years and 85% for another ten years.

The company's products are popular among customers for their high quality and performance and technical safety, and the demand for them increases.

Haepit (sunlight)-brand modules are exported to several countries.

The company is directing great efforts into developing hi-tech products as required by the current trend of using solar energy and raising their qualities to the world level while strengthening exchange and cooperation with foreign counterparts.

## Myohyang High-Tech Company

Add: Moranbong District, Pyongyang,

DPR Korea

Tel: 850-2-18111-341-8136/8383

Fax: 850-2-381-4410/4416

E-mail: kwa@star-co.net.kp

해빛





# Mt Kumgang, Celebrated Mountain in Korea

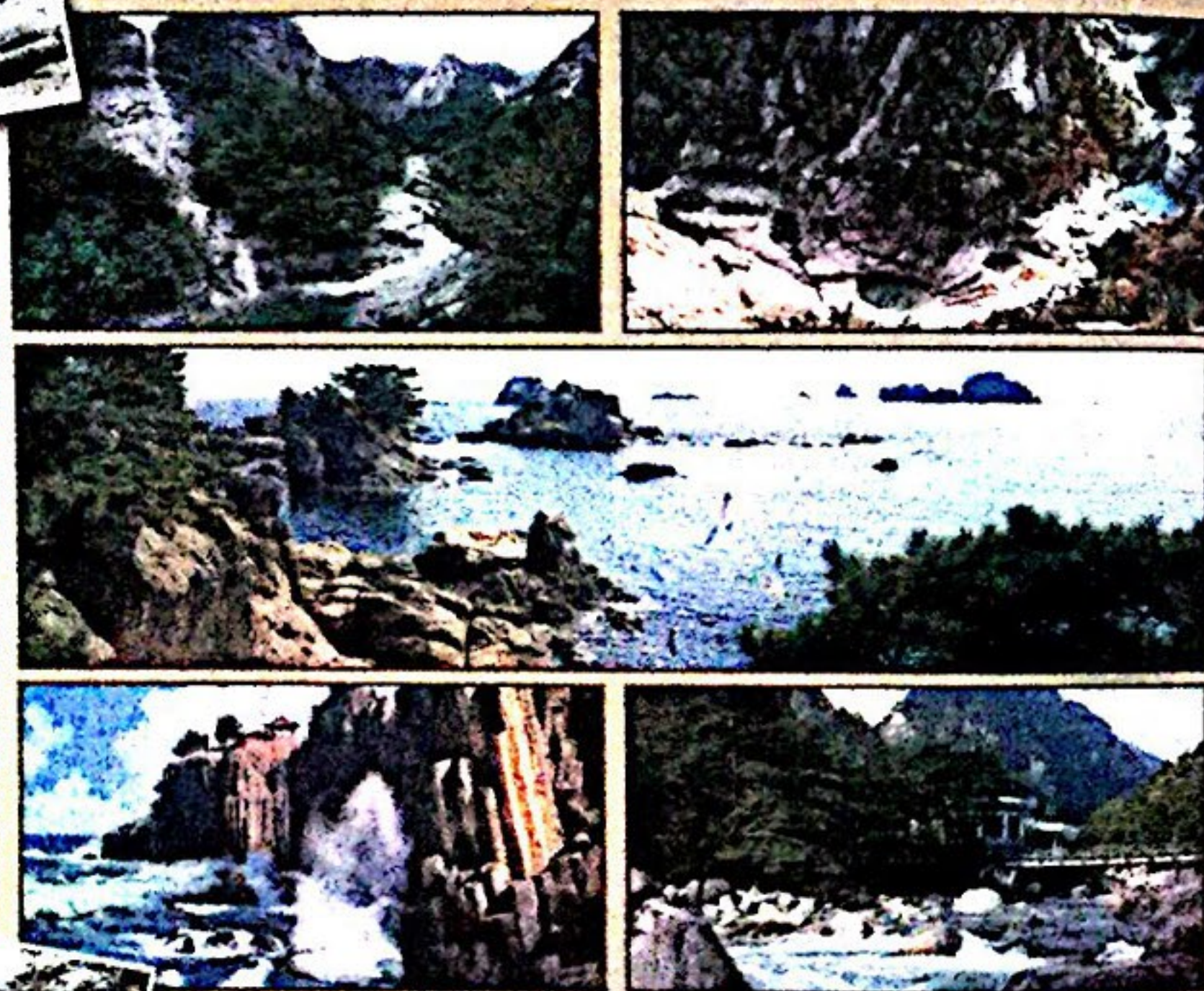
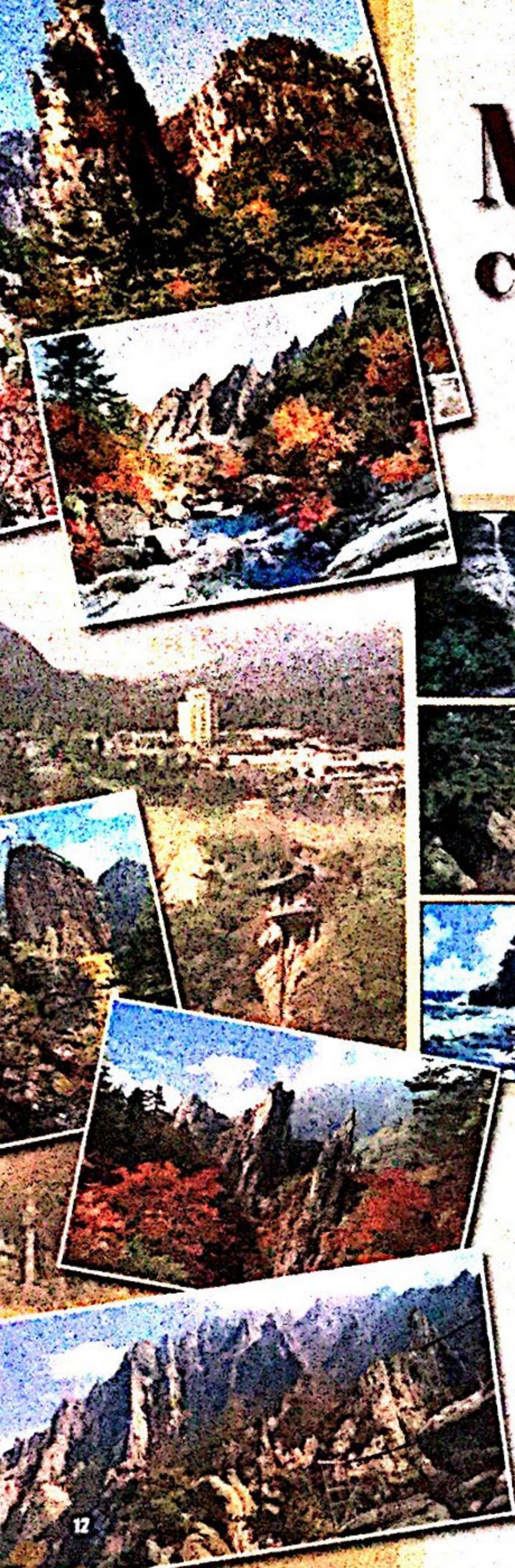
From olden times Korea has been called a silk-embroidered land of three thousand *ri* for its scenic mountains and limpid water, and among them Mt Kumgang is the most celebrated one with worldwide reputation for its superb beauty.

Mt Kumgang located in the north of the Thaebaek Mountains along the east coast of Korea, extends 60km from north to south and 40km from east to west, covering an area of 530 sq km in four counties including Kosong, Kumgang, and Thongchon in Kangwon Province.

With soaring peaks, rocks of myriad shapes, overhanging cliffs, deep ravines, crystal-clear streams and waterfalls, and a wide variety of fauna and flora, Mt Kumgang presents a fantastic view like a picture scroll.

Mt Kumgang boasts of diversified natural beauty and unique local sceneries, and it is divided into Outer Kumgang, Inner Kumgang and Sea Kumgang.

Outer Kumgang is characterized by masculine beauty with rugged and imposing peaks including Manmulsang and Jipson Peak, and virile waterfalls. Inner Kumgang is featured by feminine beauty with numerous waterfalls and mysteriously-shaped cliffs and rocks, dense forests and gentle valleys, and Sea Kumgang noted for its exciting scenery as if Mt Kumgang has been moved as a whole to the East Sea.



Wonsan Zone Development Corporation  
Add: Pothonggang District, Pyongyang,  
DPR Korea  
Tel: 0085-02-341-5030  
E-mail: [wsinvest@star-co.net.kp](mailto:wsinvest@star-co.net.kp)

Mt Kumgang boasts of a wide variety of fauna and flora with over a thousand species of flowering plants, 100 odd indigenous plants, nearly 40 species of animals, 130 odd species of birds and 10 species of amphibians. It has such historical relics as Phyohun, Yujom, and Jongyang temples and three-storeyed pagoda in Jongyang Temple. Podok Hermitage, Buddhist image, Sambul Hermitage and others, which show talents and wisdom of the Korean ancestors.

The Supreme People's Assembly of the DPRK promulgated the law on Mt Kumgang International Tourist Special Zone in May Juche 100 (2011) to provide foreign tourists with free chance for tour to Mt Kumgang as well as investors with a legal status to conduct liberal investment and economic activities in the special zone.

Mt Kumgang special zone is visa-free, and all means of communications are available.

Tourism in Mt Kumgang includes mountain climbing, sightseeing, sea-bathing, holiday-making, amusement and sports activities and medical treatment. International meetings, fairs, exhibitions, seminars, artistic performance and sports games are also available in the zone.

Foreign corporate bodies, individuals and organizations can invest independently or jointly in the infrastructure construction for the zone development, and such catering services as travel, accommodation, restaurant, casino, golf, and so on, in the form of establishing various types of enterprises.



# TANCHON Smeltery

*Korea Zinc Industry Group*

Add: Phyongchon District, Pyongyang, DPR Korea  
Tel: 850-2-18111-381-8166  
Fax: 850-2-381-4034  
E-mail: ksbepey@silibank.net.kp



Tanchon Smeltery inaugurated in November Juche 62 (1973) is a nonferrous metal producer in the DPRK.

Mainly engaged in zinc production, the smeltery has production lines of sulfatizing, roasting, liquefying, electrolyzing and casting, and all of them are controlled by the integrated manufacturing system.

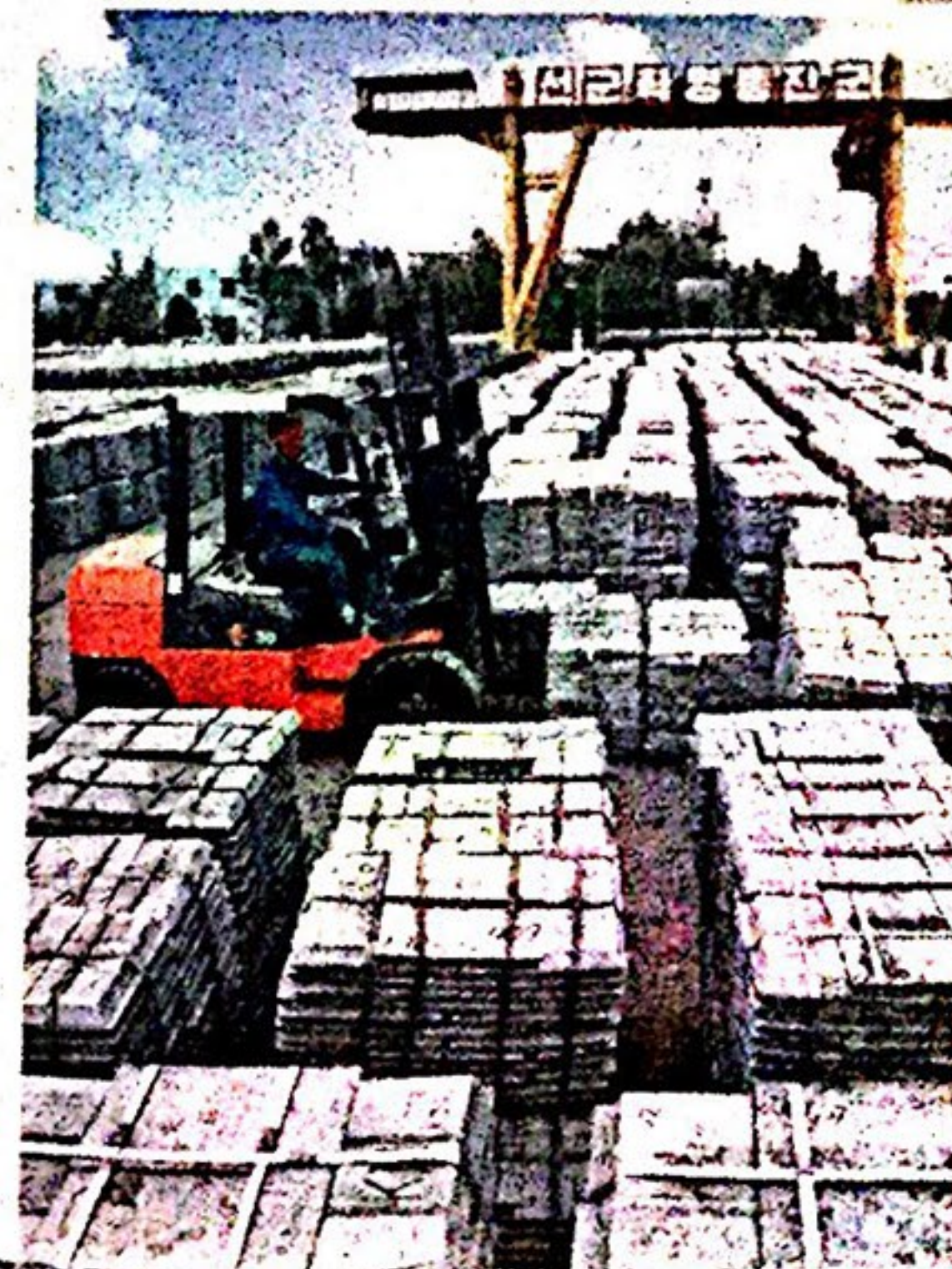
It has introduced an automatic continuous casting machine into zinc casting to make the casting, removal and loading processes automated, and newly built a line of treating zinc residuum to put zinc production on a normal footing at a higher level and recycle ten odd valuable metals from the residuum.

It also established production lines of glass fiber and plastic liquid to turn out FRP sufficient enough to manufacture various pipes, tanks, flanges and turbines.

It not only produces electrolytic zinc but also cadmium, mercury and other nonferrous and rare metals, concentrated sulfuric acid and zinc acid.

A lot of electricity is saved by installing a steam turbine generator using waste heat for the zinc roasting furnace, and a reoxidation process was newly built to prevent environmental pollution.

Its KM-brand electrolytic zinc with the purity of 99.99% has been widely recognized as a competitive article in the international market for its superior quality.







# Naenara-brand Rolling Stock



**Types:** Cars, small- and medium-size buses and small trucks

**Technical specifications:**

— Fuel consumption: 42 ~ 50g/km (for cars and buses), 58g/km (for trucks)

— Maximum speed: 120 ~ 180km/h

— Maximum output: 55 ~ 80kW

The Naenara-brand rolling stock consumes low fuel, and has air-conditioner, servosteering function and motor-windows.

They are equipped with such control systems as motor-driven exterior rear view mirroring, start-stop, and backward alarm systems.



**Chongphung Joint Venture Company**

Add: Mangyongdae District,

Pyongyang, DPR Korea

Tel: 0085-02-18111-381-8544

Fax: 0085-02-381-4410/4416







# Pyongyang Dental Hygiene Supplies Factory

The Pyongyang Dental Hygiene Supplies Factory that started production in January Juche 106 (2017) turns out in large quantities toothpastes, mouthwashes and other dental care supplies.

The factory has provided a germ- and dust-free environment for production and made the processes automated and flow-lined.

Equipped with a general production command room, analysis lab and other necessary departments, it conducts production and management activities through scientific integrated manufacturing system. All the production lines, including the management of quality, electric power, environment and machines, are automatically observed and monitored.

It turns out Paekhak-brand dental hygiene supplies, such as toothpastes containing fluorine, active calcium, nano-silver and other materials for dental hygiene and treatment, toothpastes for children, mouthwashes made of medicinal stuffs, clean water, and aromatic and various essences, dental floss, tooth-picking and denture-cleaning brushes, and tongue scrapers and brushes. These products are highly commented for their qualities.

The factory is directing great efforts into normalizing the production while focusing on the development of new products such as toothbrushes for various gums and tooth shapes.

**Korea Medical Appliances Company**

Add: Central District, Pyongyang, DPR Korea  
E-mail: [kmedapp@star-co.net.kp](mailto:kmedapp@star-co.net.kp)







# TAEAN SINTHAE Joint Venture Company

Add: Taean District, Nampho, DPR Korea  
 Fax: 850-2-381-4410  
 E-mail: kigyc@star-co.net.kp

Founded in October Juche 101 (2012), Taean Sinthae Joint Venture Company is located in Taean District, Nampho. It is a modern producer of transformers.

It is equipped with such production facilities as large, medium and small-sized winders, facilities for producing various insulating materials, equipment for 45-degree wire cutting, 60kV polar drying furnace, filters of transmitter oil and 10 - 60kV testing boards.

It is improving product stability and productivity by ensuring the accuracy of wire specifications by means of CNC dice and producing large quantities of precision copper wire of various specifications through consecutive double-dice drawing technique and vacuum oxygen-free annealing techniques.

It raised the insulating efficiency by developing and introducing new oval winding techniques, made no-load loss conform to the international quality standards by introducing 45-degree iron wire joining techniques, thus reducing it by 60-70%. It prolonged the lifespan of transmitters by 2.5 times through the introduction of the methods of manufacturing corrugated outer box and unfolded cooling to improve the cooling efficiency.

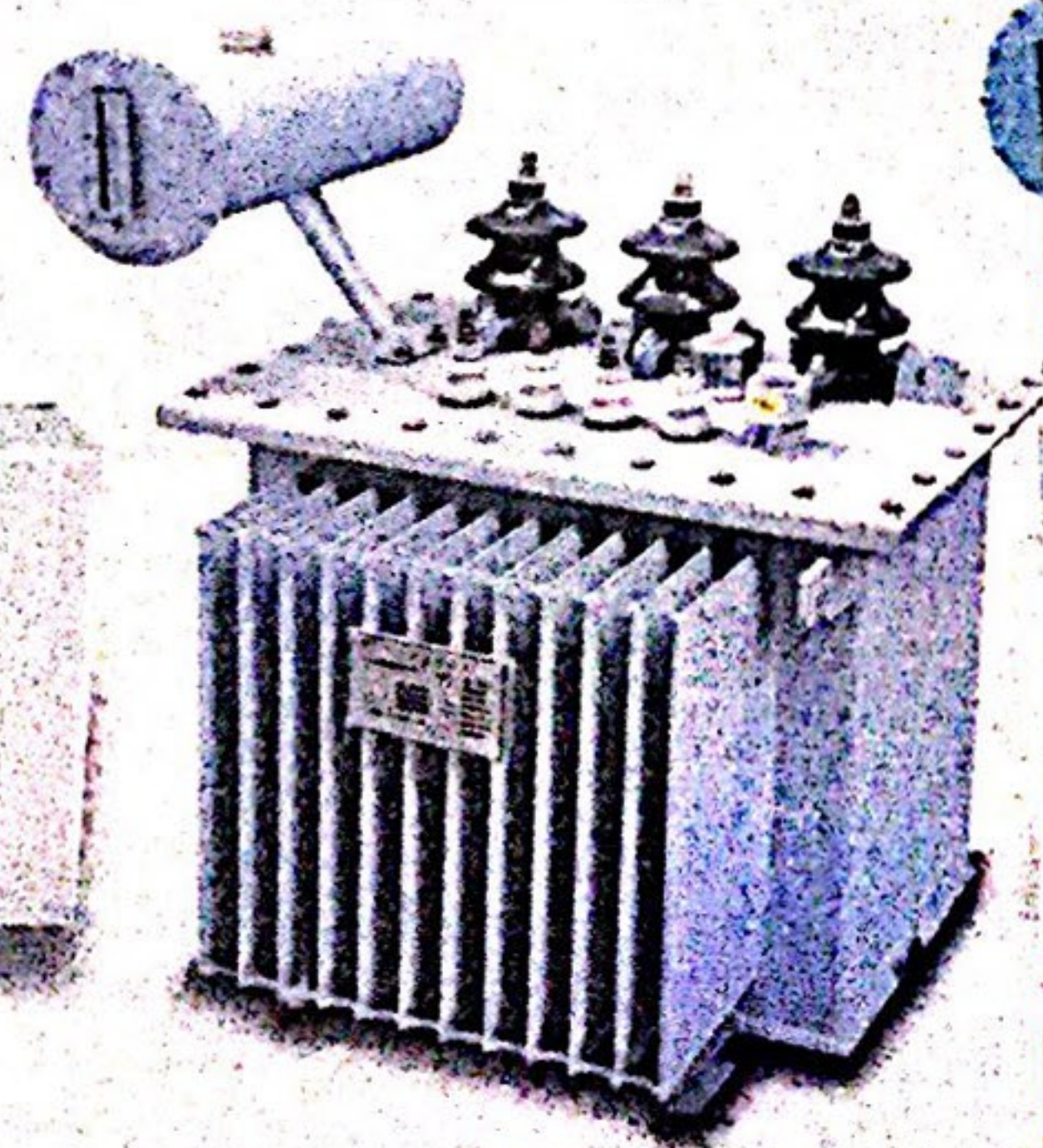
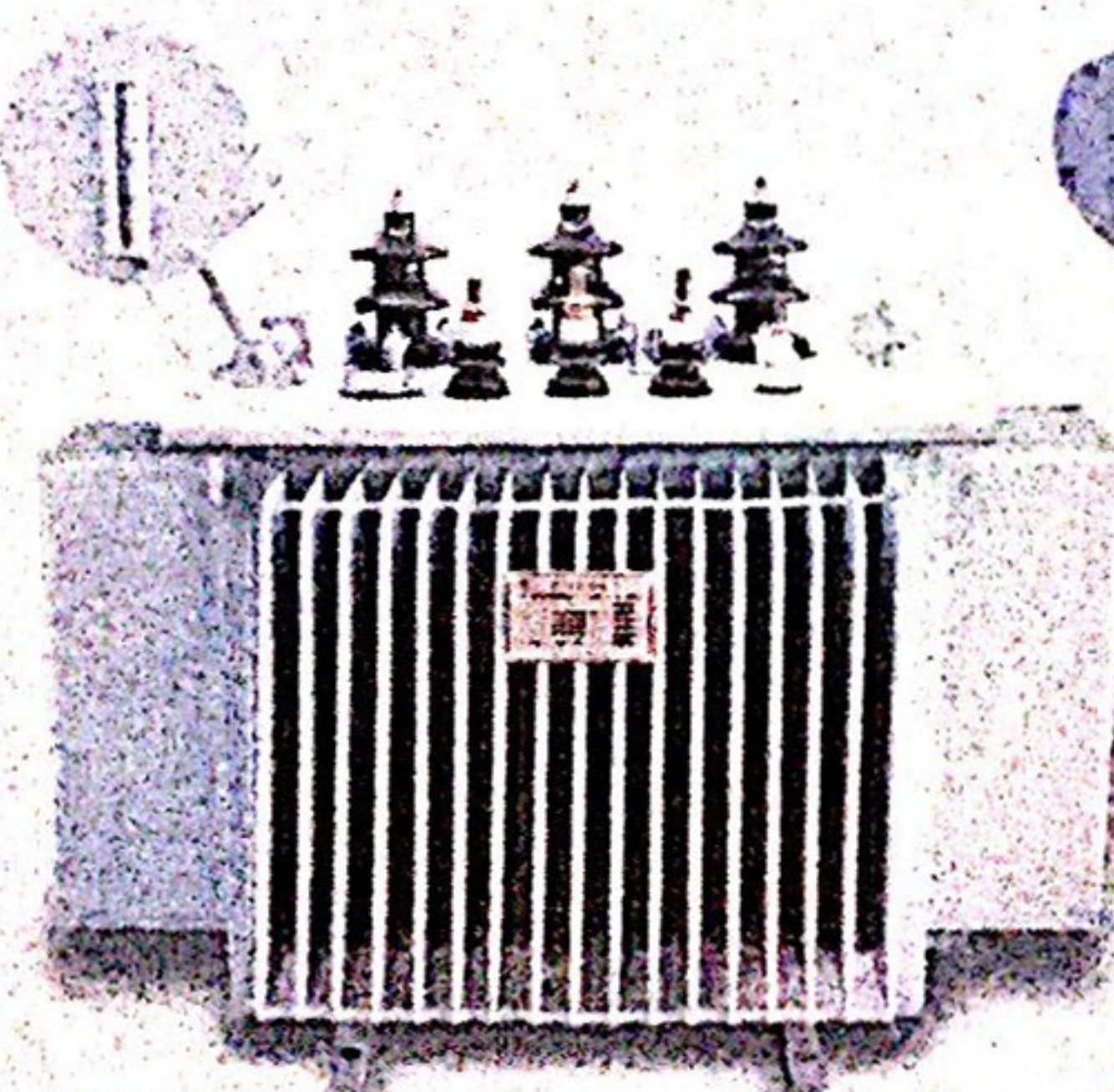
The company strictly conducts direct current resistance, no-load loss and short circuit loss measurement by all sorts of measuring facilities, the internal pressure test by means of industrial frequency, induced internal press test by means of internal frequency, impulsive wave internal pressure test and noise measuring.

Such products as various transformers, reactors, high-pressure isolating switches, transformer parts, and insulating materials are popular for their stability and efficiency.

The company satisfies the demands of its clients, transports, installs and test-runs its products on spot to order, and conducts after-sale technical service.

The products of the company have been used in the construction of Changjon Street, Masikryong Ski Resort, Unha Scientists Street, Mirm Riding Club, Mangyongdae Schoolchildren's Palace and other major projects in the country. They are highly appreciated for their technical security and enjoying greater demand for good quality and promptness.

By relying on competent technicians and solid foundations for production, the company exerts greater efforts into introducing advanced technologies, developing new products and modernizing its production lines at a higher level.





# Planetary Ball Mill

The planetary ball mill pulverizes such materials as mineral ores, ceramic, metal, medicinal stuff, chemical goods and building materials, by rotating the drum with heavy steel balls. The contents in the drum are crushed to the size of 100nm in the course of rotation.

### Technical specifications

Revolution speed: 0-250rpm  
 Rotation speed: 0-500rpm  
 Original size of raw materials: 2mm  
 Grinding and mixing method: wet or dry  
 Drum size: 1L  
 Number of drums: 4  
 Amount of grinding: 2kg  
 Power output: 1kW  
 Feed voltage: three-phase, 380V  
 External size (length×width×height):  
 700×500×600mm

Weight: 100kg

### Mirae Sci-Tech Company

Add: Central District, Pyongyang, DPR Korea  
 Fax: 0085-02-381-4410/4416  
 E-mail: kut@star-co.net.kp



# Portable Inversion-type Plasma Cutter

Portable inversion-type plasma cutter is a highly efficient and energy-saving machine for cutting steel, aluminum and nonferrous alloy metal materials.

It ensures stable operation regardless of changes in input voltage and is applied by air-cooling method. It is used by switching DC to AC, and easy to carry.

### Technical specifications

No.	Technical Index	8kW	16kW	32kW
1	Input voltage (V)	Single phase, 165-420 3-phase, 320-420	3-phase, 320-420	3-phase, 320-420
2	Frequency (Hz)	above 10	above 10	above 10
3	Maximum output power (kW)	8	16	32
4	No-load voltage (V)	250	260	280
5	Working voltage (V)	100-120	110-130	120-150
6	Range of current regulation (A)	20-60	30-100	40-100
7	Maximum cutting thickness (mm)	20	30	50
8	Cutting speed (m/min)	4.0 (10mm steel sheet)	3.8 (10mm steel sheet)	3.8 (25mm steel sheet)
9	Air pressure (MPa)	0.4-0.5	0.4-0.5	0.4-0.5
10	Air flow (L/min)	150	160	170
11	Rated activity ratio (%)	60	60	60
12	Efficiency (%)	85	85	85
13	Lifespan of electrode (h)	3-4	3-4	3-4
14	Weight (kg)	20	25	30
15	External dimensions (mm) (length×width×height)	350×350×400	400×400×450	450×450×500

### Mirae Sci-Tech Company

Add: Central District, Pyongyang, DPR Korea  
 Fax: 0085-02-381-4410/4416  
 E-mail: kut@star-co.net.kp

# Compound Ceramic Cutting Tool

The compound ceramic cutting tool is made of silicon carbide single-crystal fibre and nano hard-porcelain materials with extremely high mechanical strength and strengthening efficiency.

The tool is used to cut at high speed such hard and tough materials as heat-treated steel, white cast iron, stainless steel, bearing metal and tool steel that are difficult to process with ordinary hard alloy tools. The cutting precision and surface finish are remarkably high, and the cutting efficiency is three to ten times higher than the hard alloy tools.

### Technical specifications

Chemical composition: Al<sub>2</sub>O<sub>3</sub>-TiB<sub>2</sub>-SiCw,  
 Si<sub>3</sub>N<sub>4</sub>-TiB<sub>2</sub>-SiCw

Hardness: HRA93-94  
 Bending strength: 750-900MPa  
 Toughness: 7.8-9.5MPam<sup>1/2</sup>

### Mirae Sci-Tech Company

Add: Central District, Pyongyang, DPR Korea  
 Fax: 0085-02-381-4410/4416  
 E-mail: kut@star-co.net.kp



# Ozonizer for Water Sterilization

The ozonizer for water sterilization produces ozonized water by applying plasma technology. As a strong germicide and deodorant it is widely used to sterilize drinking water, and rooms, clothes, facilities, apparatuses, and containers in hospitals and pharmaceutical and foodstuff factories.

It also sterilizes air and removes objectionable odours at fruit and vegetable storehouses, mushroom cultivation grounds, poultry and stockbreeding farms, fisheries and public buildings.

### Technical specifications

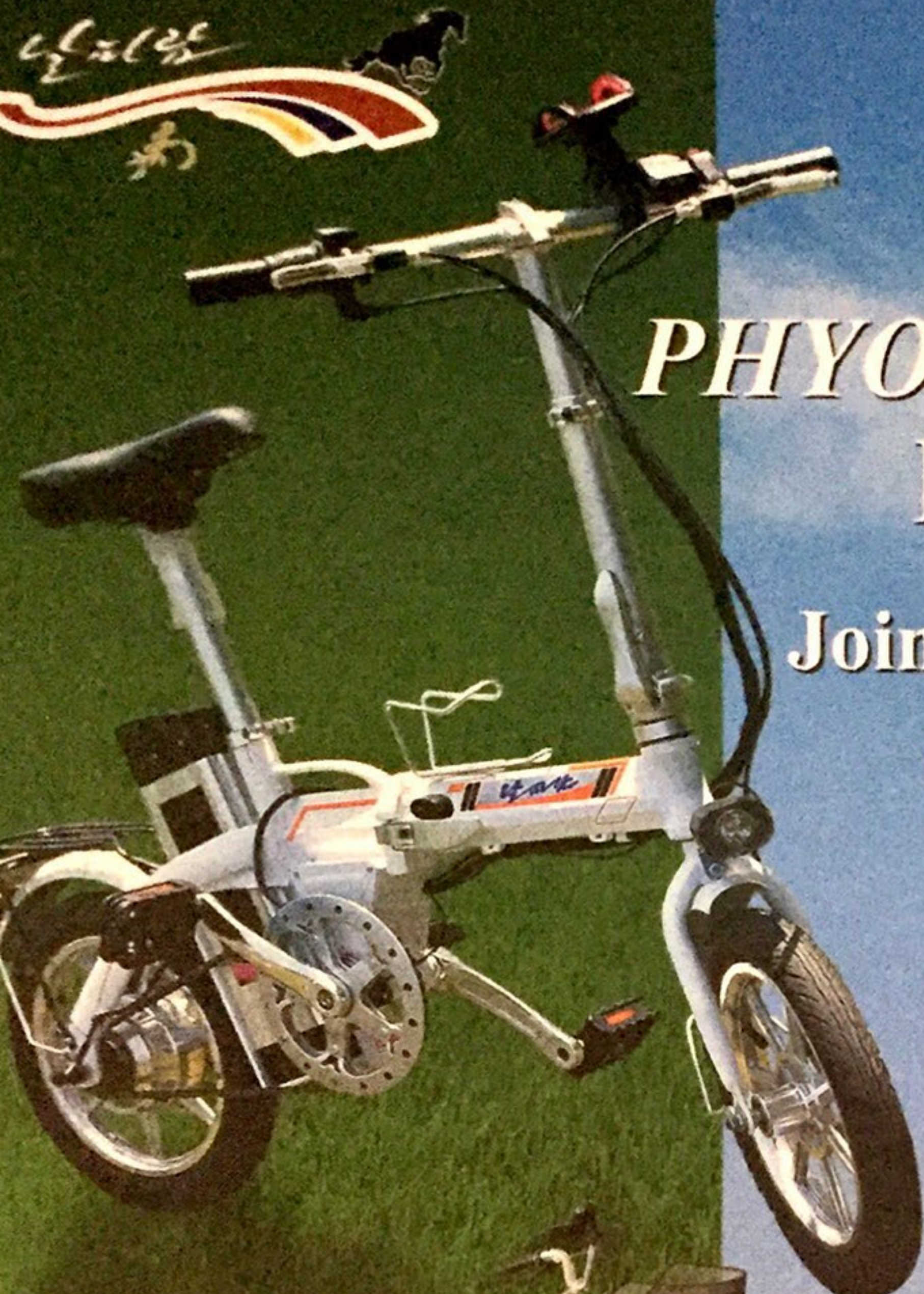
Generating amount of ozone gas: 3-5g/h  
 Output of ozonized water: 1m<sup>3</sup>/h  
 Amount of sterilized water: 1.5-3 m<sup>3</sup>/h  
 Amount of sterilized air: over 100 m<sup>3</sup>/h  
 Voltage: 220V  
 Size (length×width×height): 180×245×320mm  
 Weight: 5.5kg

### Mirae Sci-Tech Company

Add: Central District, Pyongyang, DPR Korea  
 Fax: 0085-02-381-4410/4416  
 E-mail: kut@star-co.net.kp







# PHYONGJIN Bicycle Joint Venture Company



Phyongjin Bicycle Joint Venture Company founded in October Juche 94 (2005) engages in the production and sale of various kinds of bicycles and power-free vehicles and their accessories.

The company has established comprehensive production lines of assembling frames, wheels and handlebars, finishing assembly and testing the products. It thus turns out fine and standardized goods.

A variety of bicycles, such as battery bicycles, those suitable for riding in urban and rural areas, mountain bikes, children's bikes, baby carriages, push-carts, and bicycles for the disabled, folding bicycles, and tricycles, roll off the assembly line.

Nalpharam-brand bicycles are very popular among the people for its light weight and stability, and, in particular, bicycles for children, folding bicycles and battery bicycles are in great demand.

The company is putting great efforts to develop new products with advanced technology and raise their quality, so as to satisfy the growing interests of the people.

It has several branch shops in Pyongyang and other provinces.

### Phyongjin Bicycle Joint Venture Company

Add: Sosong District, Pyongyang, DPR Korea  
Tel: 850-2-18111-381-8579  
Fax: 850-2-381-4681  
E-mail: mfbj@star-co.net.kp





# Law of the Democratic People's Republic of Korea on Import and Export of Technology

Adopted as Decision No. 119 of the Standing Committee of the Supreme People's Assembly on June 10, Juche 87 (1998) and amended and supplemented as Decree No. 1008 of the Presidium of the Supreme People's Assembly on March 9, Juche 105 (2016)

## Chapter 1. Fundamentals

**Article 1** (Mission of the law on import and export of technology)

The Law of the DPRK on Import and Export of Technology shall contribute to consolidating the independent national economy and developing science and technology by establishing a strict system and order in deliberation and approval of import and export of technology.

**Article 2** (Objects for import and export of technology)

Objects for import and export of technology include invention, patented technology and technical know-how or the equipment, trademark and industrial design embodying them.

The state shall direct great effort to import and export of technology and expand the export of technology.

**Article 3** (Principle of deliberating import and export of technology)

To properly deliberate import and export of technology is an important prerequisite for ensuring the external prestige and development of science and technology of the country.

The state shall ensure that a proper system of deliberation of import and export of technology is established and scientific accuracy and objectivity is ensured in deliberation.

**Article 4** (Principle of approving import and export of technology)

Approving import and export of technology is an important undertaking for approving technologies to be imported or exported.

The state shall ensure that import and export of technology are approved based on an accurate calculation of the feasibility of the import and export.

**Article 5** (Principle of abiding by the planning and contracting discipline in import and export of technology)

Technology shall be imported and exported according to the national economic plan and contract.

The state shall ensure that planning and contracting discipline is strictly abided by in the import and export of technology.

**Article 6** (Undertaker of import and export of technology)

Import and export of technology shall be undertaken by organs, enterprises and associations sanctioned by the central foreign trade guidance organ.

Organs, enterprises and associations thus sanctioned shall enjoy the rights and obligations as undertakers of import and export of technology.

**Article 7** (Exchange and cooperation in import and export of technology)

The state shall develop exchange and cooperation with several countries of the world and international organizations in the field of import and export of technology.

## Chapter 2. Deliberation of Import and Export of Technology

**Article 8** (Organ that deliberates import and export of technology)

Deliberation of import and export of technology is the first process in importing and exporting technology.

Organs, enterprises and associations, which plan to import or export technology shall have the relevant technology planned to be imported or exported deliberated by the central scientific and technological administrative guidance organ.

**Article 9** (Application for deliberation of import and export of technology)

Relevant organs, enterprises and associations shall submit applications for deliberation of import and export of technology to the central scientific and technological administrative guidance organ.

Attached to the applications for deliberation of import and export of technology shall be written technical proposals and written technical evaluation.

**Article 10** (Period and contents of deliberation of import and export of technology)

The central scientific and technological administrative guidance organ shall deliberate written applications for import and export of technology within 30 days upon receipt of them.

The deliberation of import and export of technology shall examine the scientific and technological guarantee, technological and economic effectiveness, secrecy and possibility of domestic production of the object to be imported.

**Article 11** (Request for deliberation of import and export of technology)

The central scientific and technological administrative guidance organ may request to specialized organs for necessary analysis to ensure deliberation of import and export of technology or ask experts to participate in deliberation.

Organs, enterprises and associations shall meet the request by the central scientific and technological administrative guidance organ in time.

**Article 12** (Informing of the result of deliberation of import and export of technology)

The central scientific and technological administrative guidance organ shall inform the relevant organs, enterprises and associations of the result of deliberation of import and export of technology in time.

Organs, enterprises and associations informed of the result of deliberation of import and export of technology shall apply within 6 months to the state planning organ to get the plan for import and export of relevant technology.

## Chapter 3. Approving of Import and Export of Technology

**Article 13** (Organ that approves import and export of technology)

To properly approve import and export of technology is a basic guarantee for the development of import and export of technology.

Import and export of technology shall be approved by the central scientific and technological administrative guidance organ.

**Article 14** (Application for getting approval of import and export of technology)

Organs, enterprises and associations that plan to import and export technology shall submit written applications for getting approval of import and export of technology to the central scientific and technological administrative guidance organ.

Attached to the applications for getting approval of import and export of technology shall be the notices of deliberation of import and export of technology, contracts for import and export of technology, and the like.

**Article 15** (Examination of application for getting approval of import and export of technology)

The central scientific and technological administrative guidance organ shall examine the applications for getting approval of import and export of technology within 10 days upon receipt of them, decide on approving or rejecting them and inform the relevant organs, enterprises and associations of the result.

**Article 16** (Mode of approving import and export of technology)

Import and export of technology shall be approved separately.

Even in the case of same technology, approval for its import or export shall be obtained again if the demander is a different one.

**Article 17** (Priority in export of technology and export on consignment)

Organs, enterprises and associations that have developed a technology have the prior claim to the export of the technology in case they have conditions of exporting it.

In case they have no condition for exporting it, they may export the relevant technology by consigning it to other organs, enterprises and associations.

**Article 18** (Cancellation of approval for import and export of technology)

The Cabinet may suspend import and export of

technology and cancel the approval for import and export of technology if necessary.

Technology that may impair the national security and interests shall not be imported and exported.

**Article 19** (Approval of taking in or taking out technology)

Technology approved for import or export shall pass the border only when its taking in or taking out is approved.

Approval of taking in or taking out technology shall be given by the central foreign trade guidance organ.

**Article 20** (Examination of documents for getting approval of import and export of technology)

The central foreign trade guidance organ shall accurately examine documents for getting approval of import and export of technology and price and contract before giving approval for taking in or taking out relevant technology.

## Chapter 4. Guidance and Control over Import and Export of Technology

**Article 21** (Basic requirements for guidance and control over import and export of technology)

Strengthening guidance and control over import and export of technology is an important condition for correctly executing the state's policy on import and export of technology.

The state shall ensure that guidance and control over import and export of technology is intensified.

**Article 22** (Guidance over import and export of technology)

Guidance over import and export of technology shall be given by the central scientific and technological administrative guidance organ under the unified guidance by the Cabinet.

The central scientific and technological administrative guidance organ shall regularly acquaint itself with import and export of technology and provide guidance over this work.

**Article 23** (Planning of import and export of technology)

The state planning organ shall map out a plan of import or export of only the technology approved by the central scientific and technological administrative guidance organ.

Plans of import and export of technology shall include plans of import of technology, plans of export of technology, plans of technical preparations, plans of joint technical preparations and the like.

**Article 24** (Concluding and executing contracts for import and export of technology)

Relevant organs, enterprises and associations shall conclude correct contracts for import and export of technology and execute them.

**Article 25** (Standard prices and charges of dealing in import and export of technology)

Import and export of technology shall be conducted in standard prices and charges. Standard prices and charges shall be set by the central foreign trade guidance organ.

**Article 26** (Mode of dealing in import and export of technology)

Organs, enterprises and associations shall settle funds related with dealing in import and export of technology through designated banks.



**Article 27** (Ensuring of the quality of technology planned to be imported or exported and the date of delivery)

The customs and other relevant organs shall conduct inspection to ensure the quality of technology planned to be imported or exported and the date of its delivery.

**Article 28** (Supervision and control over import and export of technology)

Supervision and control over import and export of technology shall be conducted by the central scientific and technological administrative guidance organ and other relevant supervision and control organs.

The central scientific and technological administrative guidance organ and other relevant supervision and control organs shall provide regular supervision and control over the result of import and export of technology and the use of imported technology.

**Article 29** (Use of foreign currency earned)

A certain amount of foreign currency earned through export of technology shall be used for the development of science and technology.

**Article 30** (Administrative penalty)

Responsible officials of organs, enterprises and associations and individual citizens shall face

administrative penalty according to seriousness in the following cases:

1. When they impeded the development of the national economy by failing to deliberate and approve import and export of technology properly;
2. When they imported or exported technology without getting deliberation and approval for import and export of technology;
3. When they formulated plans for importing or exporting technology that has not been deliberated for import or export;
4. When they approved the price of technology that has not been deliberated and approved for import or export, or when they approved taking it out or taking it in; and
5. When they incurred losses by failing to use the imported technology properly.

**Article 31** (Criminal penalty)

In case an act that is stipulated in Article 30 of this law constitutes a crime, the responsible officials of organs, enterprises and associations and individual citizens shall face criminal penalty according to the corresponding article of the criminal law.

## Songnim Export Processing Zone

The Songnim Export Processing Zone is located in Songnim, North Hwanghae Province. It faces Taean District in Nampho in the west across the Taedong River and is adjacent to Kangnam County in Pyongyang in the north.

The zone, mostly composed of flat areas, is 6km away from the Pyongyang-Kaesong Road and 2km away from Songnim Railway Station. Some 2km and 20km away from the zone are such trade ports on the Taedong River as the Songnim and Nampho ports respectively. It is 35km by train and 41km by car to Sariwon, seat of North Hwanghae Province, and about 43km by car to Pyongyang. The zone covers nearly 2km<sup>2</sup>.

The goal is to establish an integrated zone that engages in export processing of raw and other materials imported via Songnim and Nampho ports, export of iron and steel products manufactured at the Hwanghae Iron and Steel Complex, warehousing of raw and other materials at home and from abroad for the second- or third-stage processing and their transport. Therefore, there are modern export processing enterprises and other auxiliary ones for the formers' normal operation.

Factories and enterprises in Songnim and Sariwon are also engaged in consignment processing.

The mode of development is a joint development between an enterprise of the DPRK and a foreign investor or solely by a foreign enterprise.

Period of development is 50 years.

### Korea Economic Development Association

Add: Taedonggang District, Pyongyang, DPR Korea

Tel: 850-2-381-5912

Fax: 850-2-381-5889

E-mail: sgbed@star-co.net.kp

# Nano-gold Chitosan Solution

Nanoized gold, together with various natural physiological activators around it, is quickly absorbed into the cells and heightens all functions of the human body.

Chitosan is an essential material for health, as it helps improve humoral immunity, inhibit cancer, hypertension and ulcer, excrete toxic matters, lower cholesterol and retard aging.

Nano-gold chitosan solution contains nanoized gold, chitosan and other functional, natural physiological activators in harmonious combination, without any chemical elements.

It is recommended for invigorating the human energy by improving liver functions, preventing inflammation, relieving pain, tranquilizing nerves, enhancing brain functions, blood circulation and metabolism, and eliminating active oxygen and curing medicinal or chemical poisoning.

It is taken twice a day before meals, one or two phials at a time.

### Songchongang Pharmaceutical Company

Add: Haean District, Hamhung,

South Hamgyong Province, DPR Korea

Tel: 850-2-18111(ext)-341-8136/8383

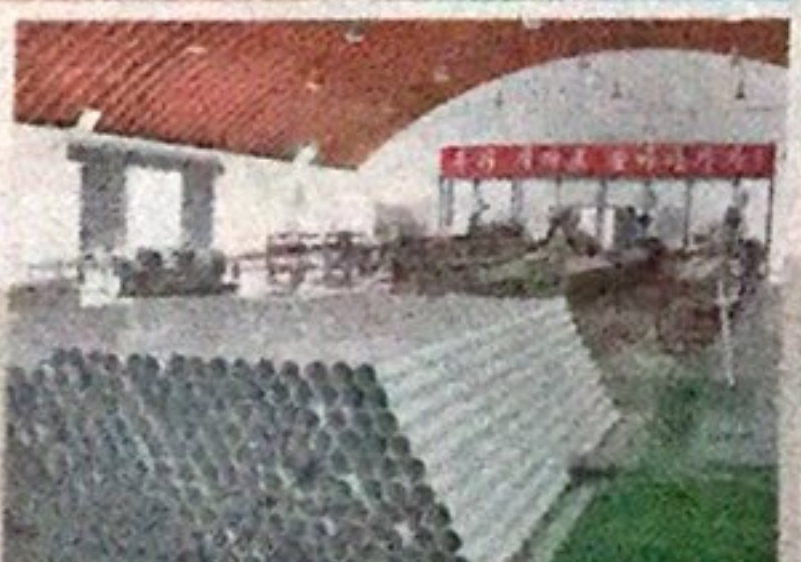
Fax: 850-2-381-4410/4416

E-mail: kwa@star-co.net.kp





# Pyongyang Construction Trading Corporation



The Pyongyang Construction Trading Corporation engages in the supply of facilities, building and other materials, and fixtures.

Its legal address is Moranbong District, Pyongyang.

The corporation has the Pyongyang Building Materials Factory and the Yonthan Slate Mine, and other large building materials production bases, as well as equity or contractual joint venture and other trading companies and shops.

As a comprehensive building materials manufacturer, the Pyongyang Building Materials Factory mass-produces high-quality Ulmildae-brand building parts, including tiles, sanitary ware, coating materials, scagliola, paints, plastic-framed windows and PVC pipes, so as to meet the growing demand for modernization in construction.

The Yonthan Slate Mine with large deposits of high-grade slate turns out such slate products as roof tiles, handrails, balusters, gateposts and chairs. The processed slate goods are very solid and preserve natural colours.

The Thongil Metal Processing Company has set up modern bases for producing metal stoppers, stainless-steel facilities and goods and rolled steel to produce ordered goods.

The corporation's products have proved their worth in the construction projects of Changjon, Mansudae and Mirae Scientists streets, Mangyongdae Wading Pool, Ryugyong Health Complex, Mirim Riding Club, Munsu Water Park, . Sci-Tech Complex and other monumental edifices, and are favoured by the users.

Relying on the modern building parts production bases and advanced scientific achievements introduced into production, the corporation has remarkably improved the quality of the products to the world level and also established a cycle of production, sale and extended reproduction.

Regarding it as its business strategy to find its way into foreign markets, it puts a great effort to conduct diversified trade transactions with many countries and also sends competent personnel to foreign countries to design and construct dwelling houses and public buildings.

It is promoting exchange and cooperation with foreign countries under the credit-first policy.

**Pyongyang Construction Trading Corporation**  
 Add: Moranbong District, Pyongyang, DPR Korea  
 Tel: 0085-02-18111-341-8576  
 Fax: 0085-02-381-4410  
 E-mail: ccom@star-co.net.kp





## Intelligent Fire Monitor

As an intelligent device, the fire monitor detects the possible causes of fire and sends alarm signals promptly through communications between smoke and temperature sensors, manual alarm device and various displays.

The monitor performs such functions as data, smoke, temperature and numerical display, gives alarms for fire, AC power supply, line and sensor failures, and controls the smoke and temperature sensors, setting of the areas, time and sensor numbers.

### Technical specifications

Voltage: AC100-240V

Working temperature and humidity: 0-40°C, 50-90%

Range of sensor address: 242 per line

Data scanning time: 4-5s

Bus voltage for sensor's signal: DC 24V

Bus current capacity of the monitor: 200mA

Interlocking type: 20, 50, 100, 400, 800 point interlocking type (point is the number of sensors)

Kanghng Technology Trading Company

Add: Sosong District, Pyongyang, DPR Korea

Tel: 850-2-18111-341-8544 Fax: 850-2-343-6663

E-mail: arrangip@star-co.net.kp



Ryuwon-brand shoes for football, basketball, volleyball, track-and-field, table-tennis and other sports are very durable, elastic and flexible, as they are designed to bear the loads specific to each sports event.

Those for mountaineering and other activities are seasonal and also vary in type and kind for individual preparedness by age and gender.

Light, comfortable and good-looking Ryuwon-brand shoes are favoured among sports enthusiasts.

## RYUIWON-brand

### Shoes Win Favour

### among Sports Enthusiasts



첨사봉

## Intelligent Electric Regulating Valve

As an automatic device for fluid flow control, the valve can be controlled by either process input directly from the display unit or wire and wireless communications.

It controls the amount of fluid flow with 4-20mA signal for the passing area according to the pipe diameter.

### Technical specifications

Diameter: 25 - 250mm

Voltage: AC100 - 230V, DC12V

Power output: 40 - 200W

Torque: 100 - 6 000Nm (200Nm in case of 60W)

Working time: 30 - 120s

Working pressure: 2.5MPa at the maximum

Medium: water, air, oil and subacid fluids

Working temperature and humidity: -25 - 60°C, ≤90%RH

Setting: automatic/manual

Control function: by computer, HMI or PLC

Communications method: RS-485 wire communications,

ZigBee wireless communications

Kanghng Technology Trading Company

Add: Sosong District, Pyongyang, DPR Korea

Tel: 850-2-18111-341-8544

Fax: 850-2-343-6663

E-mail: arrangip@star-co.net.kp



Korea Footwear Trading Company

Add: Central District, Pyongyang, DPR Korea

Tel: 00850-2-18111-18999 OP3418140

Fax: 00850-2-381-4485

E-mail: mlidea@star-co.net.kp



# New-model Mobile Phone JINDALLAE

The mobile phone is newly designed in the circuitry of the motherboard, liquid crystal display, user interfaces, control and management of programs.



## Technical specifications

CPU: Quad-Core, 1.3GHz  
ARM Cortex-A7, 32bit  
Image processor: Mali-400  
Memory: RAM 1GB, Flash 16GB  
Display: 4.7in/IPS/1 280×720/320dpi  
Sensors: proximity detector, acceleration sensor,  
magnetic sensor, photoelectric sensor  
Camera: Back camera 8.0M pixels  
Front camera 2.0M pixels  
Bluetooth: version 4.0  
Operation system: Android 4.4.2  
Capacity of built-in battery: 1 850mA  
Capacity of external battery: 5 000mA

**Mangyong Technology  
Trading Company**  
Add: Mangyongdae District,  
Pyongyang, DPR Korea  
Tel: 0085-02-341-8209  
E-mail: ntc@star-co.net.kp



No. 782109