

IMAGINING TEXTILE HUB IN BHIWANDI

By

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A REPORT

Submitted in partial fulfillment of the requirements for the degree of
Bachelor of Architecture.



University of Mumbai

2017

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AIKTC 
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CERTIFICATE

This is to certify that the Design Dissertation titled A TEXTILE HUB IN BHIWANDI is the bonafide work of the student MOMIN MUSHFIQUE ASIF from Final Year B. Arch of AIKTC School of Architecture and was carried out in college under my guidance.

Sign of the guide:

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DECLARATION

I hereby declare that this written submission entitled “IMAGINING TEXTILE HUB IN BHIWANDI” represents my ideas in my own words and has not been taken from the work of others (as from books, articles, essays, dissertations, other media and online); and where others’ ideas or words have been included, I have adequately cited and referenced the original sources. Direct quotations from books, journal articles, internet sources, other texts, or any other source whatsoever are acknowledged and the source cited are identified in the dissertation references.

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ACKNOWLEDGEMENT

First of all I would like to thank almighty God who has blessed me & has given me the strength and guided me throughout all phases of my life.

I would like to dedicate this thesis to my parents and all people of Bhiwandi who have been over ruled by the merchant dominance in the city and who are taking part in the making of such dream to come true, the people usually suffer a lot because of lack of knowledge and awareness in the field of textile business and I hope in the future they will shine toward making better growth of this sector and thereby fulfilling the needs of the people.

The project “**IMAGINING TEXTILE HUB IN BHIWANDI**” would not have been possible without the guidance, I am thankful to all the teaching and non teaching staff of our collage for this support and guidance throughout the duration of project. I would like to convey my sincere regards & thank to **Prof. Poonam R. Mhatre** for guidance throughout the project and debate toward my success in my thesis project.

I am very thankful to other textile owners and all other people who helped me for better understanding of this textile business.

Last but not least I would like to thank my dad **ASIF AHMED MD. HUSSAIN MOMIN**, my mom **AAFREEN ASIF MOMIN**, my beloved brothers, sister and my friends.

What ever I am today by god grace because of my parents. It was not being possible without their support.

ABSTRACT

What are the basic needs of a man?

Food, Clothing and Shelter.

The Textile Sector in India ranks next to Agriculture. Textile is one of India's oldest industries and it occupies a unique place in our country. It is one of the earliest which came into existence in India. It has 14 percent of the total Industrial production, which contributes nearly 30 percent of the total exports. After agriculture, most of the individuals are engaged and employed in this sector.

Textile Industries are providing one of the most basic needs of people which hold importance in maintaining sustained growth and for improving quality of life. It has a unique position as a self-reliant industry, from the assembly of raw materials to the delivery of finished products, with substantial value-addition at every stage of processing. It's a serious contribution to the country's economy. This paper deals with structure, growth and size of the Indian textile trade, role of textile trade in economy, key blessings of the trade, textile trade export and international state of affairs and strength, weakness, opportunities and treats of the Indian textile trade.

Bhiwandi is a city, situated in the district of Thane, in the western part of the Maharashtra state, in India. The city is considered a part of the greater Mumbai metropolitan agglomeration, along with Navi Mumbai, Kalyan, Thane, Dombivli, Mira-Bhayandar and the Vasai-Virar region. Bhiwandi is known for its textile industry, and it has the largest number of power looms in the country and is known as Manchester of India. Major population of Bhiwandi are engaged & employed in power loom sector for their income. There are about 11.06 lakhs power looms in Maharashtra; Out of which around 8 lakhs power looms machines are found in Bhiwandi. The city produces around 3 crores meters fabric per day and it estimates that around 60 lakhs meters of grey fabrics of special qualities is sourced from Bhiwandi on daily basis.

As there are growing scope of textile in our country as stated by Indian ministry of textile, a textile hub is necessary for a city which has this huge number of power looms and textile production, this will eventually increase the economy of the city as well as standard of living of the people.

INTRODUCTION

The Indian textile industry is one of the largest with a huge raw material and textiles manufacturing base. Our economy is largely dependent on the textile manufacturing and trade in addition to other major industries. About 27% of the foreign exchange earnings are on account of export of textiles and clothing alone. The textiles and clothing sector contributes about 14% to the industrial production and 3% to the gross domestic product of the country. Around 8% of the total excise revenue collection is contributed by the textile industry. So much so, the textile industry accounts for as large as 21% of the total employment generated in the economy. Roughly 35 million individuals are directly employed in the this activities. Indirect employment including the manpower engaged in agricultural based raw-material production like cotton and related trade and handling could be stated to be around another 60 million.

A textile is the largest single industry in India (and amongst the biggest in the world), accounting for about 20% of the total industrial production. It provides direct employment to around 20 million people. Textile and clothing exports account for one-third of the total value of exports from the country. There are about 1,226 textile mills with a spinning capacity of about 28.5 million spindles. While yarn is mostly produced in the mills, fabrics are produced in the powerloom and handloom sectors as well. The Indian textile industry continues to be predominantly based on cotton, with about 65% of raw materials consumed being cotton. The yearly output of cotton cloth was about 12.8 billion m (about 42 billion ft). Textile is one of India's oldest industries and has a formidable presence in the national economy inasmuch as it contributes to about 14 per cent of manufacturing value-addition, which includes around one-third of gross export earnings and provides gainful employment to millions of people.

India's textile business is one among the economy's largest. In 2000/01, the textile and garment industries accounted for regarding 4 % of GDP, 14 % of business output, 18 % of business employment, and 27 % of export earnings. India's textile business is additionally important in an exceedingly international context, ranking second to China within the production of each cotton yarn and cloth and fifth within the production of artificial fibers and yarns.

BACKGROUND STUDY:

- Bhiwandi is a city, situated in the district of Thane, in the western part of the Maharashtra state, in India.
- Located 20 km to the north-east of Mumbai and 15 km to the north-east of Thane.
- Bhiwandi comes under the administration of the Bhiwandi-Nizampur City Municipal Corporation.
- The city is considered a part of the greater Mumbai metropolitan agglomeration, along with Navi Mumbai, Kalyan, Thane, Dombivli, Mira-Bhayandar and the Vasai-Virar region.
- Major population of Bhiwandi are engaged & employed in power loom sector for their income.
- Bhiwandi is known for its textile industry, and it has the largest number of power looms in the country and is known as Manchester of India.
- According to the reports of census 2011, population was 709,665.
- The power loom industry is the main reason for huge number of floating population.
- The power loom sector of Bhiwandi is structurally flawed and its efficiency and growth depends upon the corrective measures and their effectiveness.
- As there are growing scope of textile in our country as stated by Indian ministry of textile, a textile hub is necessary for a city which has this huge number of power looms and textile production, this will eventually increase the economy of the city as well as standard of living of the people.
- This process of improving the structural aspects of the industry was initiated in the year 1985 textile policy, which for the first time took a sectoral view of the industry.
- The government is spelling out the need for an integrated approach whereby all sectors will be modernized synchronously.
- This approach is felt to enhance the textile industry to get a level of upgraded production with new technology and make it strong enough to face the changed competitive global scenario from the year 2005.
- In order to meet the changed competitive due to liberalization of economy, and globalization and privatization, hence it is felt that the unorganized power loom
- Sector should be modernized, especially in the present segment of weaving.

- For all these to happen and to prepare a proper action plan in which all the stake holders i.e. the government, central and state, the weavers community.
- The interest groups get fully involved.
- To prepare an effective perspective plan which would boost this important sector.
- Hence this study of textile power loom sector which focuses on modernization and other aspects to convert this unorganized sector to organized sector, as the business is not being uplifted as per the present generation to meet up the globalization requirement.
- Maharashtra occupies a specific position in the textile map of the country.
- There are about 11.06 lakhs power looms in Maharashtra.
- Out of which around 8 lakhs power looms machines are found in Bhiwandi.
- Majority of the power looms in Bhiwandi produce grey materials which are used as shirting and dress material of ladies dresses.
- Cloth produced in Bhiwandi is mainly consumed by Indian market as it is not up to the mark in the international market.
- The grey cloth of Bhiwandi is transported to various parts of Gujarat and Rajasthan for finishing purpose.
- Because there are textile hubs in Gujarat.
- So, there is a need of textile hub in Bhiwandi to enhance the textile business in various aspects, which help in the increment of the city economy and increase the job opportunity in within the city and also reduce the transportation.
- From manufacturing to finishing to marketing all can be done under same complex.
- Transportation cost will be reduced.
- Thus planning different activities in a single complex would result in economic use of land and user efficiency for the city of Bhiwandi.
- A textile hub which constitute manufacturing, finishing as well as financing and marketing all in one area would work out to be the best option for both manufacturer and buyers.
- Such project would offer an excellent response to the overall development of textile business and have a futuristic vision in improving Indian economy.
- The project will include housing facilities for the migrant workers and also a primary school for their children.
- It will ultimately become a complex where textile garments will be produced from start to finish and there will be various other facilities inside the complex for workers and staff.

Economy of the city:

- The economy of Bhiwandi is largely depend on the power loom industry.
- The decline of Mumbai's textile mills increased the growth of the power loom in Bhiwandi.
- In order to reach the demand for grey fabric, power loom centers sprang up in various parts of the state.
- Textile and migrant workers especially migrant labours came in these areas to find work at these centers.
- The bloom of cloth oil and looms still attract the worker from different states to come and find a suitable jobs.
- The state government estimates that nearly 40 lakh people depends directly or indirectly on the looms of Bhiwandi.
- The power loom industry is the main reason for huge number of increasing population.
- Bhiwandi Nizampur is the "richest city in thane district".
- Bhiwandi became the "highest paid octroi". With the largest godown located in Asia.
- These godowns are owned by local politicians.
- Bhiwandi is the 'mother godown' for several industries and the nodal up-country booking and transit point for several goods transporters owing to the octroi benefits that can be availed of there.
- The biggest names in the pharmacy company have their godowns in Bhiwandi.
- Industry estimates that around 60 lakhs meters of grey fabrics of special qualities is sourced from Bhiwandi on daily basis.
- The city produces around 3 crores meters fabric per day.
- Surat has 6.5 lakhs power loom. While Bhiwandi has 8 lakhs power looms.

OBJECTIVE:

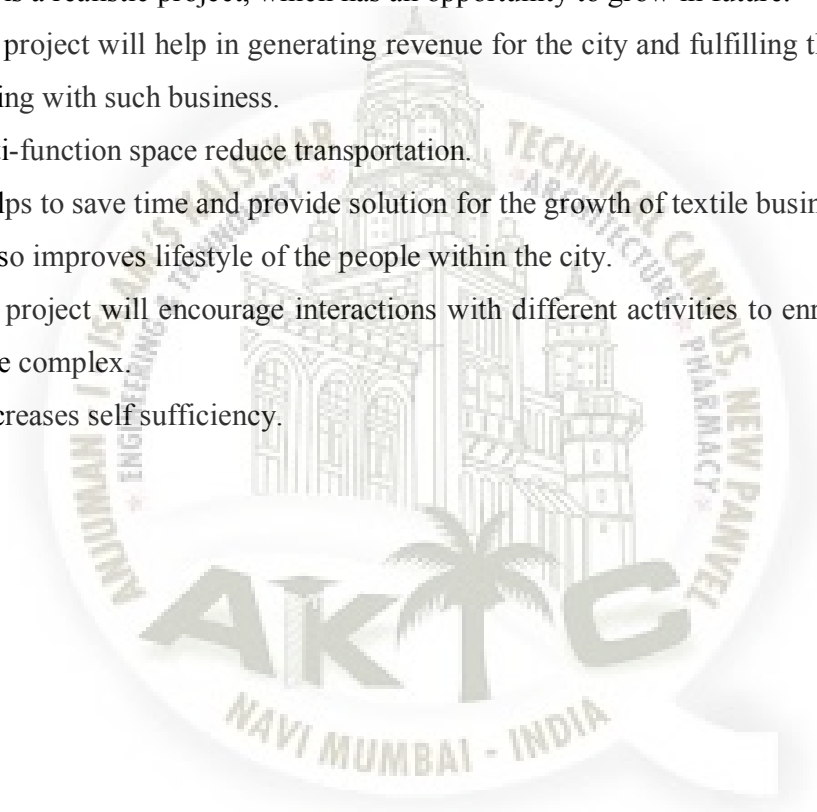
To provide a textile hub which will be a model and landmark of textile commerce for the city and & industry eventually.

To provide amenities which promotes textile business through-

- Buyers-seller meets.
- Conferences.
- Exhibition of latest fabric and machinery.
- Cloth finishing units and coloring dying.
- Space for various artworks on cloth.
- An inclusive cloth market of grey fabric and finished clothes.
- Housing facilities of migrant workers.
- To increase the economy of the city.
- To reduce the transportation.

SCOPE:

- This is a realistic project, which has an opportunity to grow in future.
- This project will help in generating revenue for the city and fulfilling the needs of the people relating with such business.
- Multi-function space reduce transportation.
- It helps to save time and provide solution for the growth of textile business within the city.
- It also improves lifestyle of the people within the city.
- This project will encourage interactions with different activities to enrich functioning of the entire complex.
- It increases self sufficiency.



METHODOLOGY:**DATA COLLECTION:**

- Understanding of multi functional space in a building required for textile business.
- Identifying key issues or standard aspects.
- Changes or transformation in textile business.
- history and evolution of textile business.
- Understand the process of finishing of cloth after production.

CASE-STUDY:

- Live case study.
- Study of multi functional activities of process.
- Study of various textile related activities.
- No of textile industry and their operating.
- Standard for various area requirement.
- Bye law.
- Study of Bhiwandi city and its connectivity.
- Study of various forms for the building and finalize a suitable form.
- Study of various important aspects of a building which include no of floors, no of lifts and built up area.

ANALYSIS:

- Case study analysis.
- Site analysis.
- Climatic analysis.
- Physical analysis.
- Contextual analysis.
- Conclusion.

2.6 LIMITATION:

- Initially it will not cater to whole of the textile production of the city.
- It depends up on the people who want to use this service which will be provided by the complex.
- It will work with the co-operation of the people.
- Commercial spaces to be designed and other spaces are allotted at suitable position.
- Functions should be entertain before designing.

TRANSPORTATION:**ROADWAY:**

- Bhiwandi Nizampur is well connected with the rest of the country because of the Mumbai-Agra highway (national highway-3), which passes through it.
- The Bhiwandi's (state transport) depot is located on the Mumbai-Agra highway.
- Buses run every half hour to nearby depots like Mumbai-central, thane, Kalyan, Vasai, Wada and Borivali, Nasik, Shirdi, Aurangabad, Pune etc.
- The Thane municipal transport operates bus services from Bhiwandi Narpoli to Thane, and the Kalyan-Dombivli municipal transport operates bus services from Bhiwandi Gopal Nagar to Kalyan, every 20 minutes.
- T.M.T bus also started from thane to Bhiwandi after every 15 minutes.
- Auto-rickshaws too, run from Bhiwandi to thane and Kalyan.

RAILWAY:

- The Bhiwandi Nizampur road station lies on the Vasai-Diwa corridor, between the western line and central line.
- An passenger train which is run by a diesel service runs from diva to Vasai only five times in a day.
- Many mail trains make a stop here.
- Recently computerized reservation service was installed at this station and Vasai-Diwa line considered as suburban rail network.
- There is a necessity for a suburban rail line for Bhiwandi Nizampur.
- The metro rail corporation plans to connect the Thane-Kalyan line through Bhiwandi Nizampur.
This may result in more floating population.

Airway:

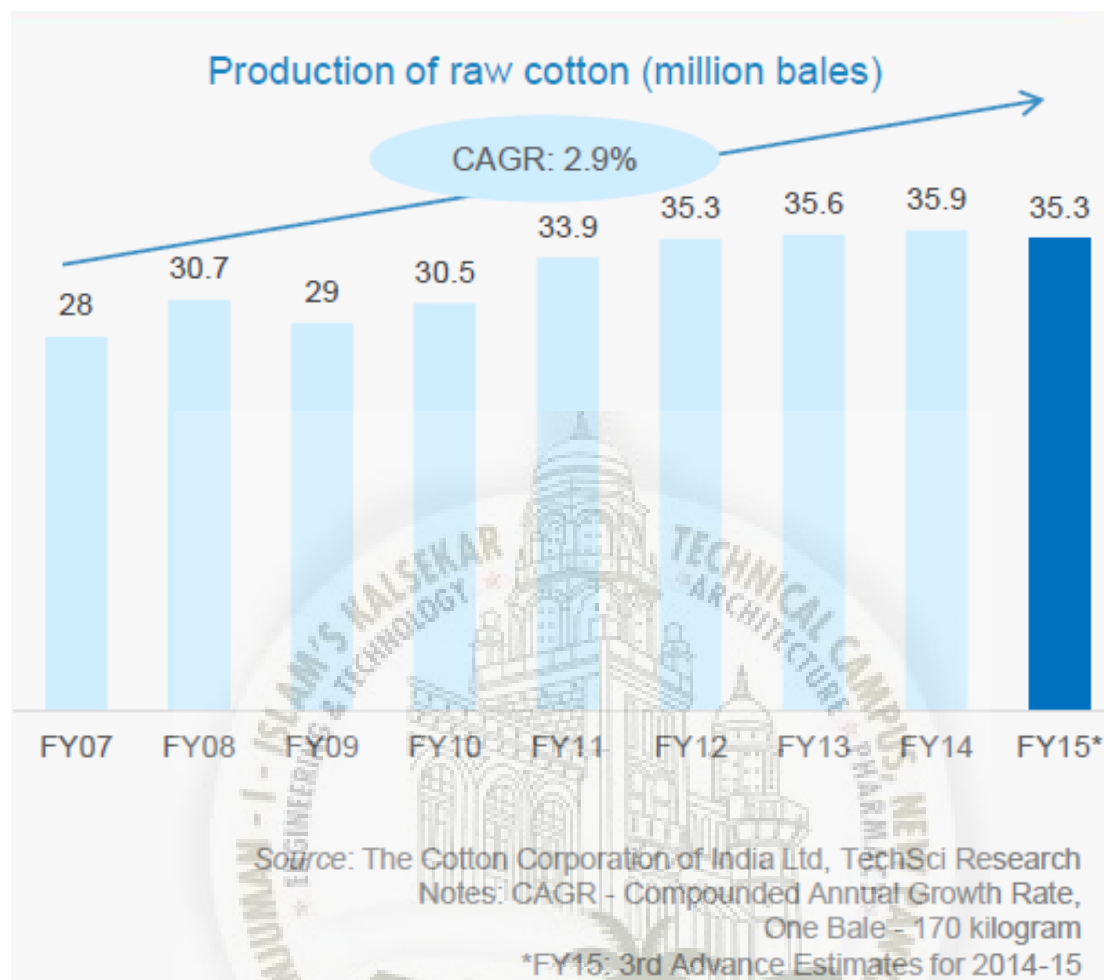
- The nearest airport from Bhiwandi city is the Mumbai international and domestic airport at a distance of around 50 km.
- Another international airport is proposed at Navi Mumbai.

LITERATURE REVIEW:**KEY FACTS:**

- The fundamental strength of the textile industry in India is its strong production base of wide range of fiber/yarns from natural fibers like cotton, jute, silk and wool to synthetic/man-made fibers like polyester, viscose, nylon and acrylic.
- According to UN com trade data released in June, 2014
- India was announced as the world's second largest exporter of textiles and clothing in the world.
- And 6th largest exporter of clothing only.
- India accounts 63 percent of the market share of textiles and garments.
- India is the 2nd biggest producer of silk and cotton.
- Indian textile industry accounts for about 24 percent of the world's spindle capacity and 8 percent of global rotor capacity.
- India has the highest loom capacity (including handlooms) with 63 percent of the world's market share.
- India accounts for about 14 percent of the world's production of textile fibers and yarns (largest producer of jute, second largest producer of silk and cotton; and third largest in cellulosic fiber).

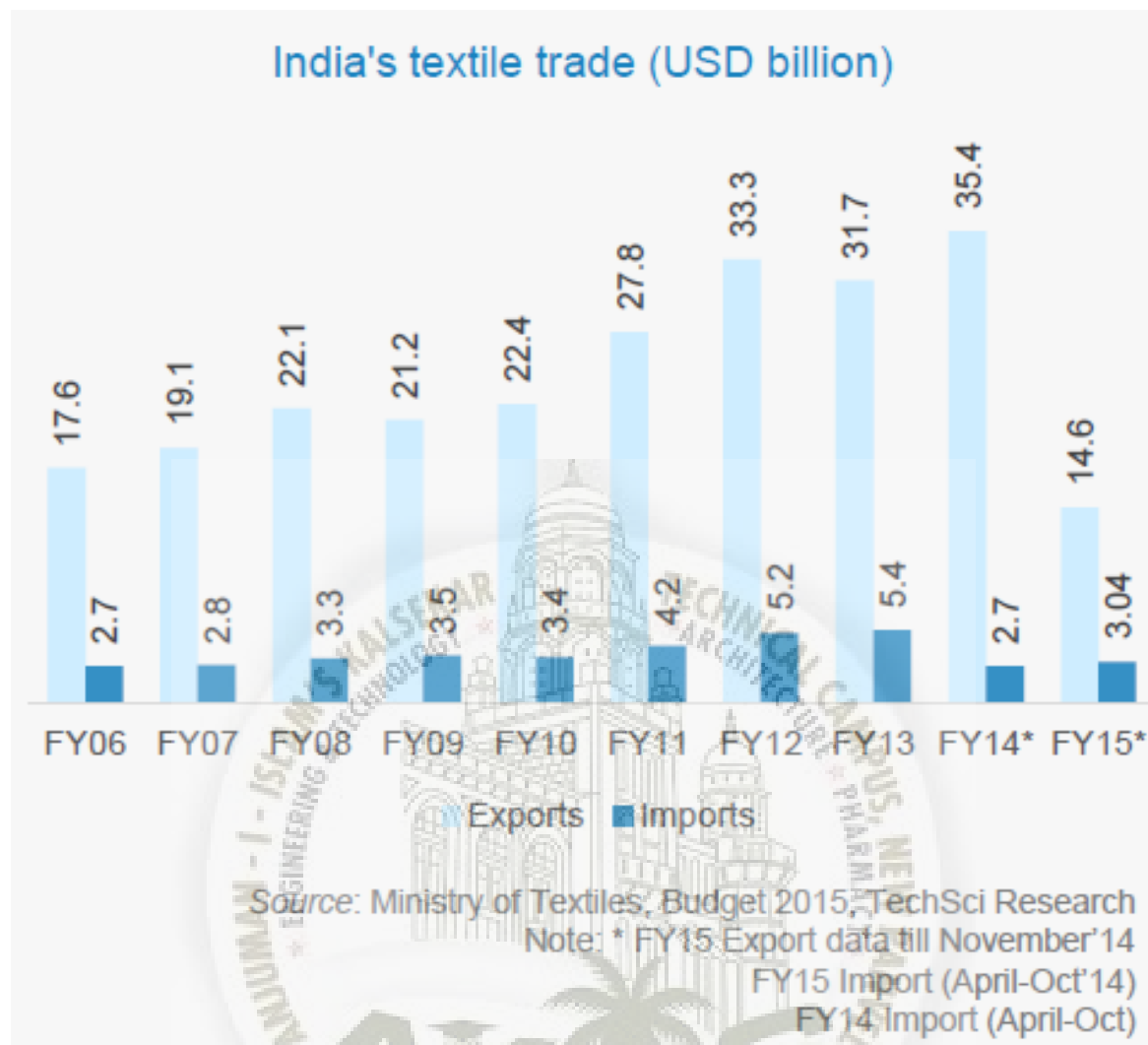
GROWTH OVER THE YEARS:

- Textile plays a major role in the Indian economy
- It contributes 14 percent to industrial production and 4 percent to GDP.
- With over 45 million people, the industry is one of the largest source of employment generation in the country
- The industry accounts for nearly 13 percent of total exports
- The size of India's textile market in 2014 was USD 99.0 billion which is expected to touch USD 226 billion market by 2023 at a CAGR of 8.7 percent between 2009-23.



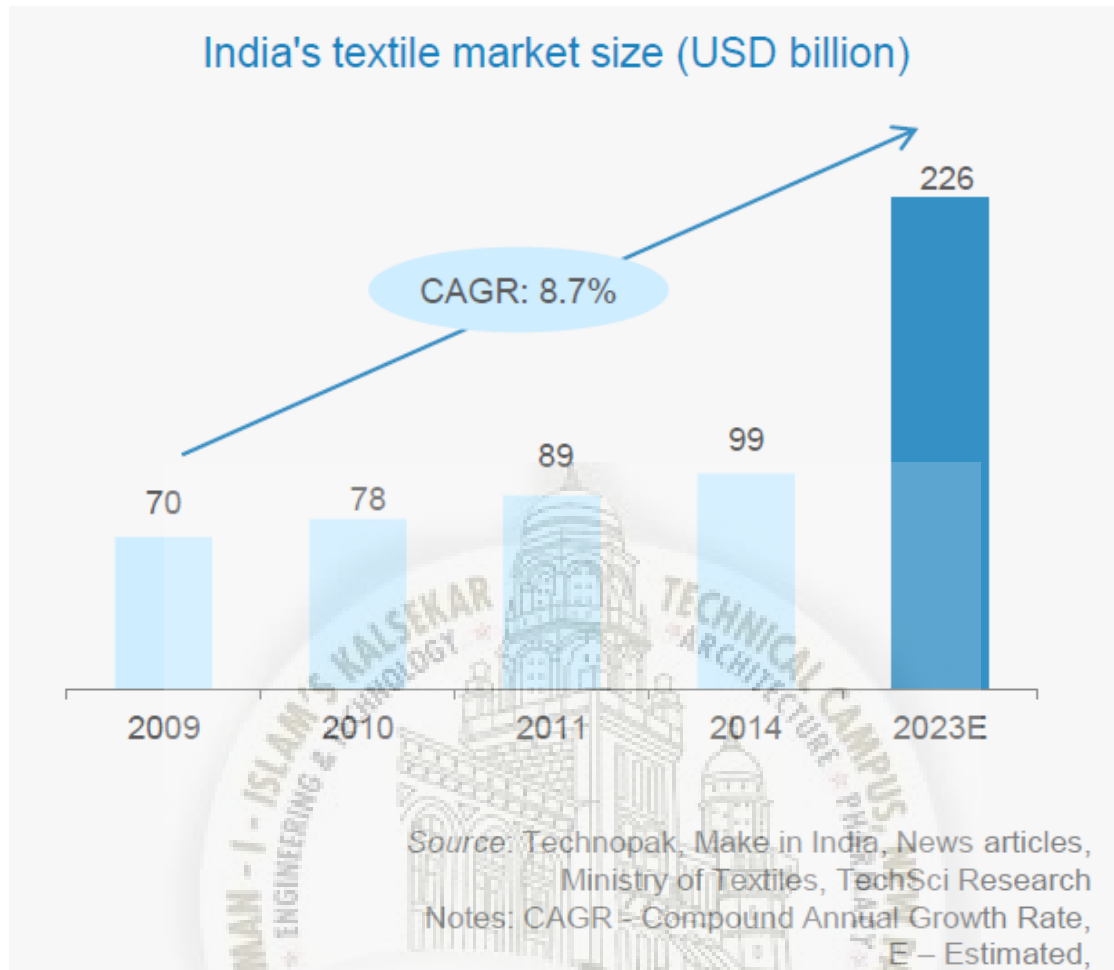
COTTON PRODUCTION OVER THE LAST FEW YEARS:

- Production of raw cotton grows to 36 million bales in year 2014, up from about 28 million bales in year 2007. Till 3rd advance estimates for year 2015, production of raw cotton in year 2015 was 35.2 million bales.
- During same time, production expanded at a CAGR of 3 percent.
- During year 2014, of the overall amount of raw cotton produced in the country, domestic consumption totaled 30 million bales, while in year 2015, 17.8 million bales was the domestic consumption between October 2014 to April 2015.



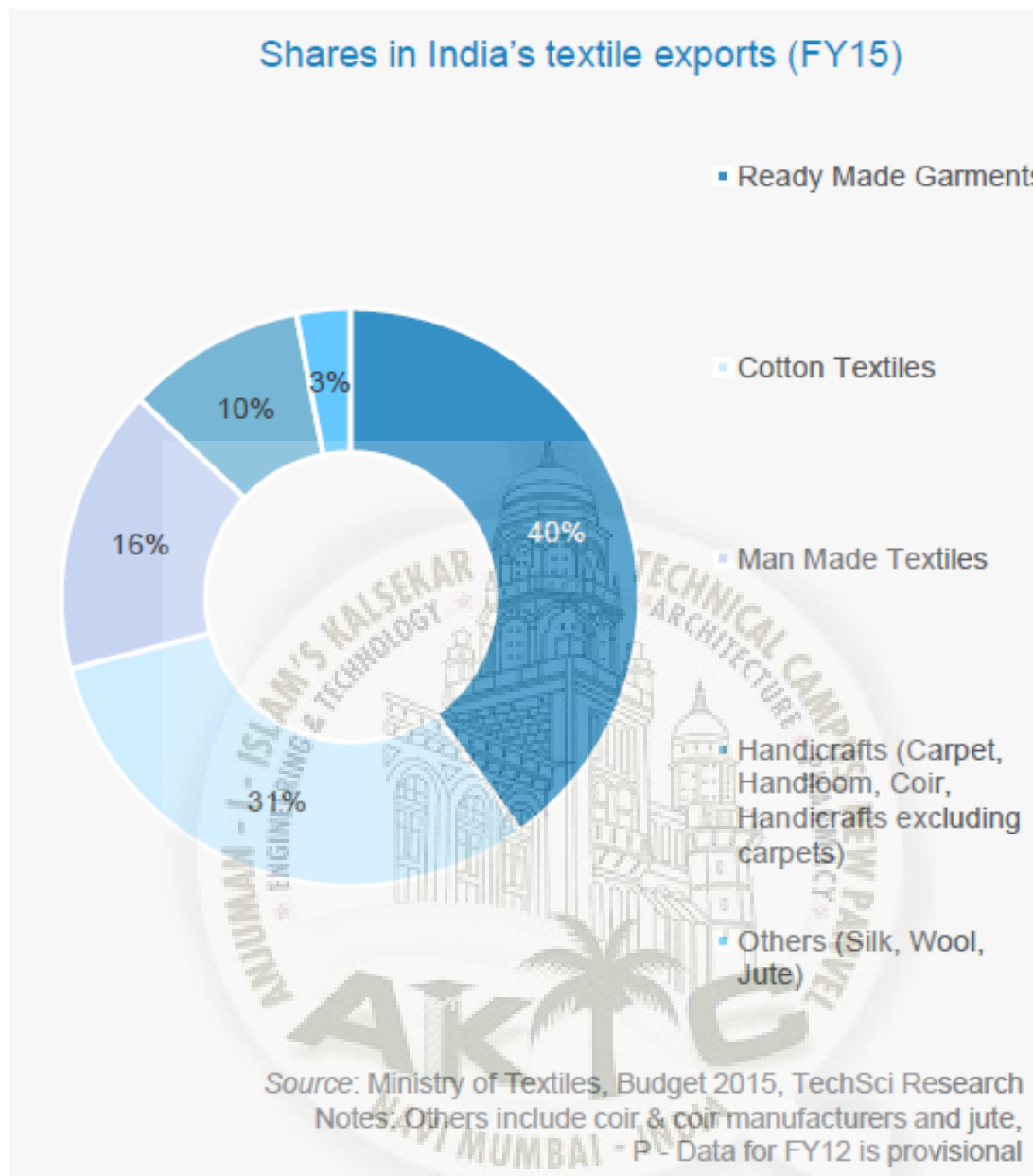
INDIA'S TEXTILE TRADE:

- Export has been a base feature of India's textile and apparel sector, a fact corroborated by trade figures.
- Exports grown to USD 35.3 billion in year 2014 from USD 17.5 billion in year 2006, implying a CAGR of 9 percent.
- Exports during year 2015 (between April - November) touched USD 14.5 billion.
- However, in year 2014 India's textile exports crossed the mark of year 2012 also and touched USD 35.5 billion.



INDIA'S TEXTILE MARKET SIZE:

- In 2009, the size of the market was 70.
- And it shows a specific amount of growth till 2014 with a size of the market was 99.
- It is estimated that till 2023, it will grow to 226.



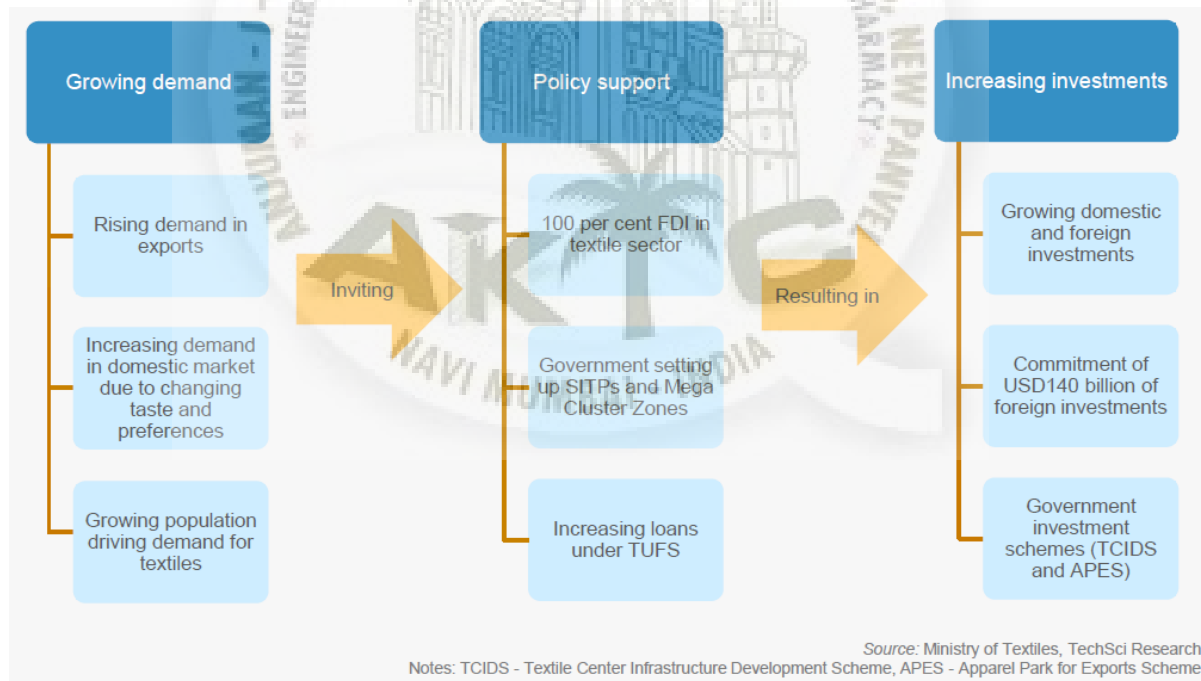
READYMADE GARMENTS AND COTTON TEXTILES DOMINATES EXPORTS:

- Readymade garments is the largest contributor to total textile and apparel exports from India in year 2015 the segment has a share of 40 percent.
- Cotton and man-made textiles are the major contributors with shares of 31 percent and 16 percent.

TRENDS IN NOTABLE TEXTILE SECTOR:

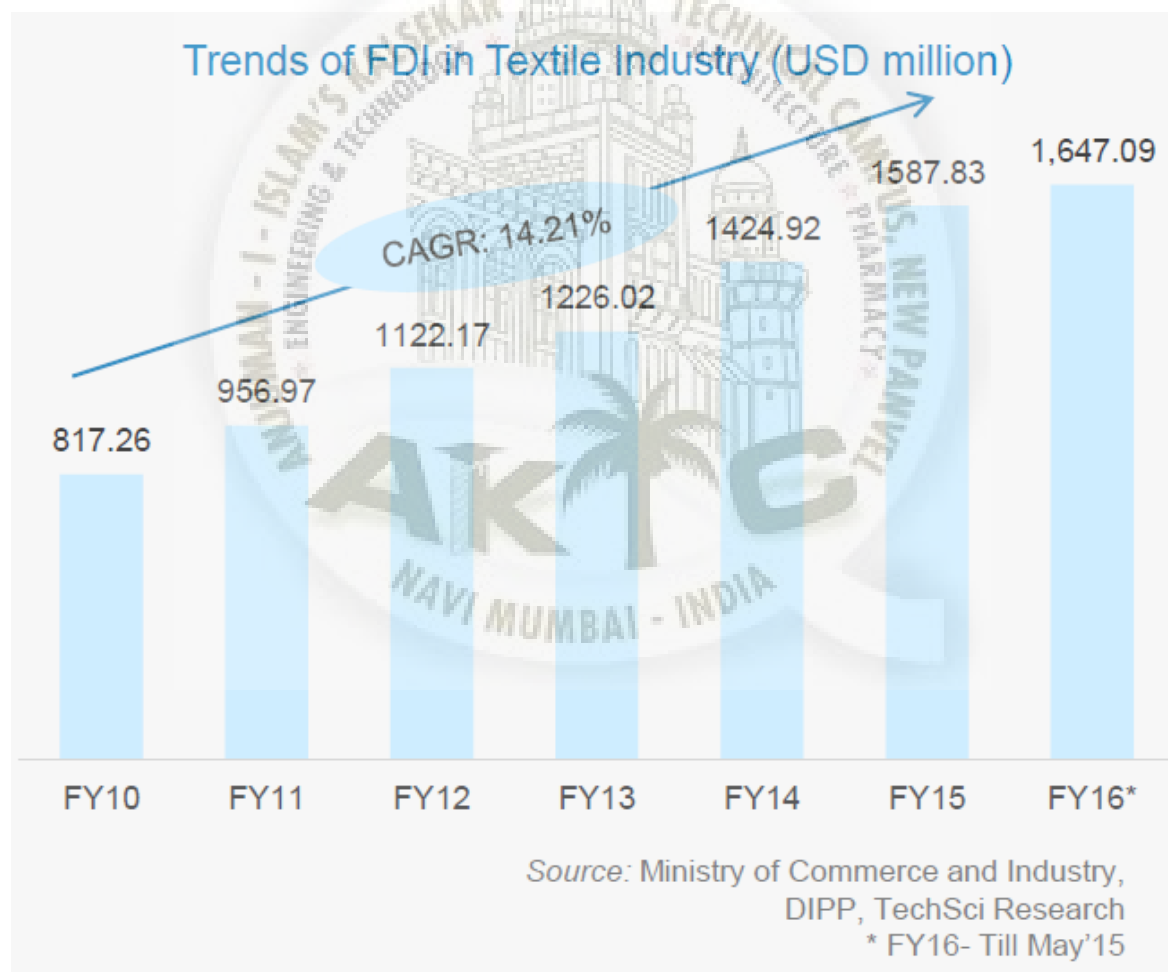
- Increasing investment in TUFS.
- Government applying investments through increasing focus on schemes such as technology upgrading finance scheme and cluster development scheme
- Multi fiber arrangement (MFA).
- Cotton prices in India are integrated with international market.
- Government cleared 13 new textile parks in different states.
- Public private partnership.
- It invites participation of private individual in textile sector.
- It is growing almost around double during past few years.
- Scheme for integrated textile park- under SITP 40 plus textile parks has been sanctioned (worth 900 USD)
- Foreign direct investment –FDI is up to 100 percent is allowed in textile sector.

FUNDAMENTAL AND POLICY SUPPORT:



FOREIGN INVESTMENTS:

- 100 percent FDI is granted in sector.
- Indian textile industry experienced noticeable growth in the year 2015, as FDI increased to USD 1588 million in year 2015 from USD 1425 million in year 2014. following , till may'15 FDI in flow in textile industry stood at usd 164 million.
- In year 10-15, FDI in textile and apparel industry grew at a CAGR of 14.20 percent.
- The textile industry in India is experiencing a significant increase in collaboration between global major and domestic companies.
- International apparel giants, like Hugoboss, Lizclaiborne, Kanz and Diesel, have already started operation in India.



Case-study of printing and dyeing.

Name: Ghasletwala mill/ Balotrawala dyeing.

Location: Nawahorbazar, Chhipakuva, Danilimda, Ahmedabad -022.

Area: 2000 sq.m. approx.

Topography of land: Flat land.

Programme:

1. Owners office- 14 sq.m
2. Cloth storage after drying- 24 sq.m
3. Workers area- 18 sq.m
4. Dyeing machine area- 56 sq.m
5. Boiler- 22 sq.m



Figure 1.1 Google image of the mill.



Figure1.2 Zoom out google image.

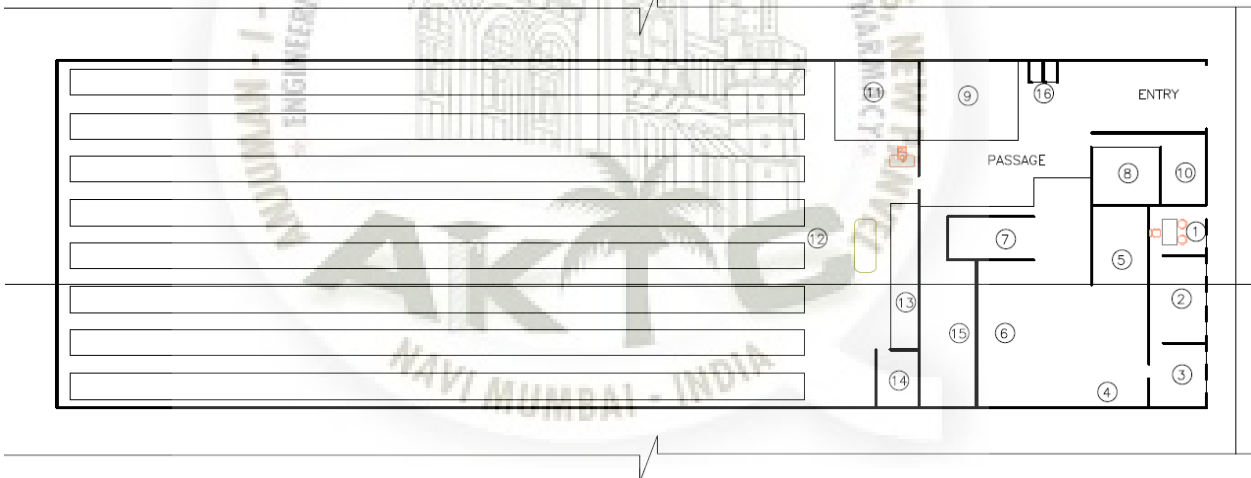


Figure 1.3 Schematic plan of the mill.

- | | |
|---------------------------------------|-----------------------------------|
| 6. Boiler and dyeing area- 56 sq.m | 7. Drying machine- 18 sq.m |
| 8. Area for separating cloth- 19 sq.m | 9. Drying area—38 sq.m |
| 10. Calender machine- 16 sq.m | 11. Colour storage area- 32 sq.m |
| 12. Printing area- 1290 sq.m | 13. Screen storage- 20 sq.m |
| 14. Storage after pronting-12 sq.m | 15. Wash area after print-40 sq.m |
| 16. Toilets- 2 blocks. | |



Figure1. 4 Drying machine



Figure1. 5 Storage area after washing.



Figure1. 8 Drying area



Figure1. 6 Washing area after dyeing.



Figure1. 7 Colouring machine.



Figure1. 10 Colour storage is not proper



Figure1. 9 Boiler and dyeing area.

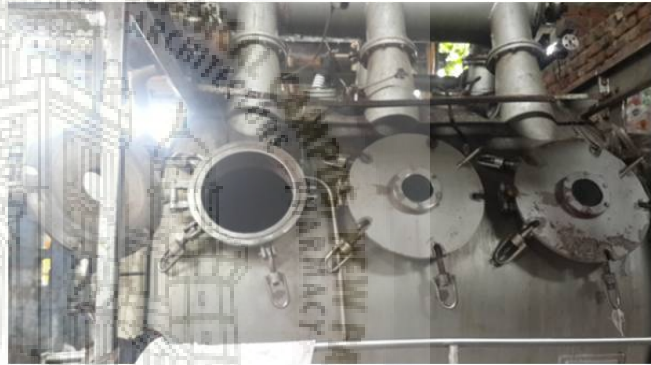


Figure 1.11 Boiler



Figure1. 13 Boiler



Figure1. 12 Colour storage.



Figure1. 15 Final storage



Figure1. 14 Toilets are improper



Figure1. 16 Separating of clothes.



Figure1. 17 Screens



Figure1. 18 Screen storage



Figure1. 20 Printing area



Figure1. 19 Entrance



Figure1. 22 Approach road 6 meter wide



Figure1. 21 View from the entrance

ANALYSIS:

Purpose of selecting this case study that how the work is done on a small scale.

The structure is of steel frame work with brick walls.

There is no aesthetics given to it.

The working environment is not proper.

The storage of materials is not in good condition.

But the functioning of the space is good.

Entrance is enough for entering tempo & small vehicles and there is also a problem of water logging in rainy season at the entrance.

Storage room is not well maintained.

Washing area does not have roof, which makes washing difficult in rainy season.

It was a small scale factory.

Per day production 1500 - 2 piece suits and 600- 3 piece suits.

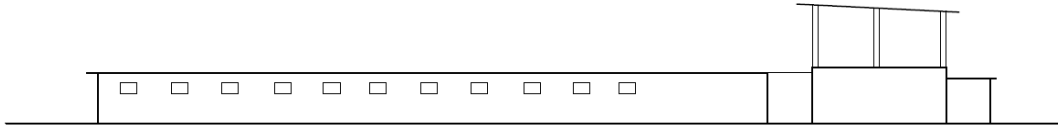
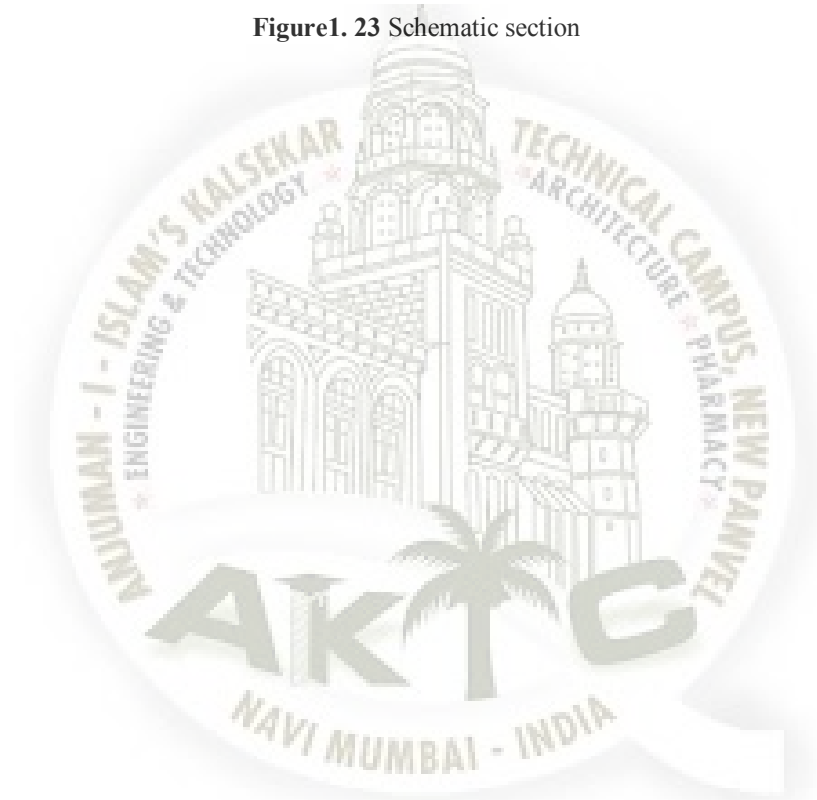


Figure1. 23 Schematic section



Case study of stitching process

Name: sapna garments.

Location: a/1, a/2, Palki maharajni khetar, Near sikander market, Danilimda, Ahmedabad -022.

Area: 150 sq.m

Structure: g+1

Topography: Flat land

Site context: Improper road with water logging.

Construction: r.c.c. frame structure.

Programme:

1. Owners office – 21 sq.m
2. Cloth storage – 27 sq.m
3. Sticthing area – 90 sq.m
4. Washroom mens – 15 sq.m
5. Washroom womens – 15 sq.m
6. Stitching area – 136 sq.m



Figure2. 1 Google image

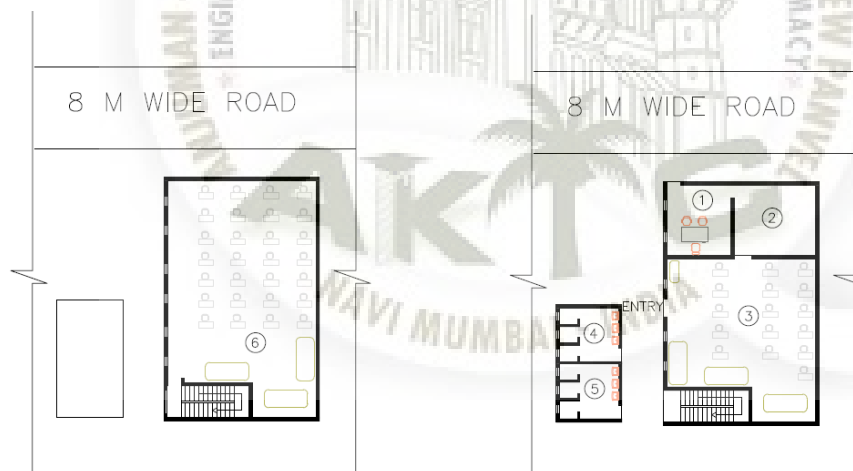


Figure 2. 2 Schematic plan of G.FLOOR and 1st FLOOR

PROCESS:

RAW MATERIAL – CUTTING – BUNDLING – FINISHING – SIDE STICTHING – POCKET STICHTING – BOTTOM – OVERLOCK – TOP – ELASTIC OVERLOCK – KANZAI MACHINE - TRIMMING – QUALITY CHECKING – STEAM IRONING – TAGGING – PACKING – FINAL PRODUCT CHECKING.

DAILY PRODUCTION:

500 – 600 pieces either of t-shirts, track pants, leggings etc.

ANALYSIS:

- There is no proper ventilation.
- The space is less according to the activity.
- No informal space in the structure.
- Flow of the function is good.
- There is no fire safety.



Figure 2. 3 View of the working area.

Case study of Beijing lingerie factory

Architects: cross boundaries

Year: 2004

Area: 14000 sq.m floor area



Figure 3. 1 View of Beijing lingerie factory

- **Programme:**
- Distribution centre
- Manufacturing area
- Research and development office
- Storage
- Showcasing of products
- 300 people dormitory
- Material storage
- Conference centre
- Event space
- Technical space
- Office
- Sewing workshop
- Shops
- Clipping workshop
- Informal space
- Terrace
- Inner landscape

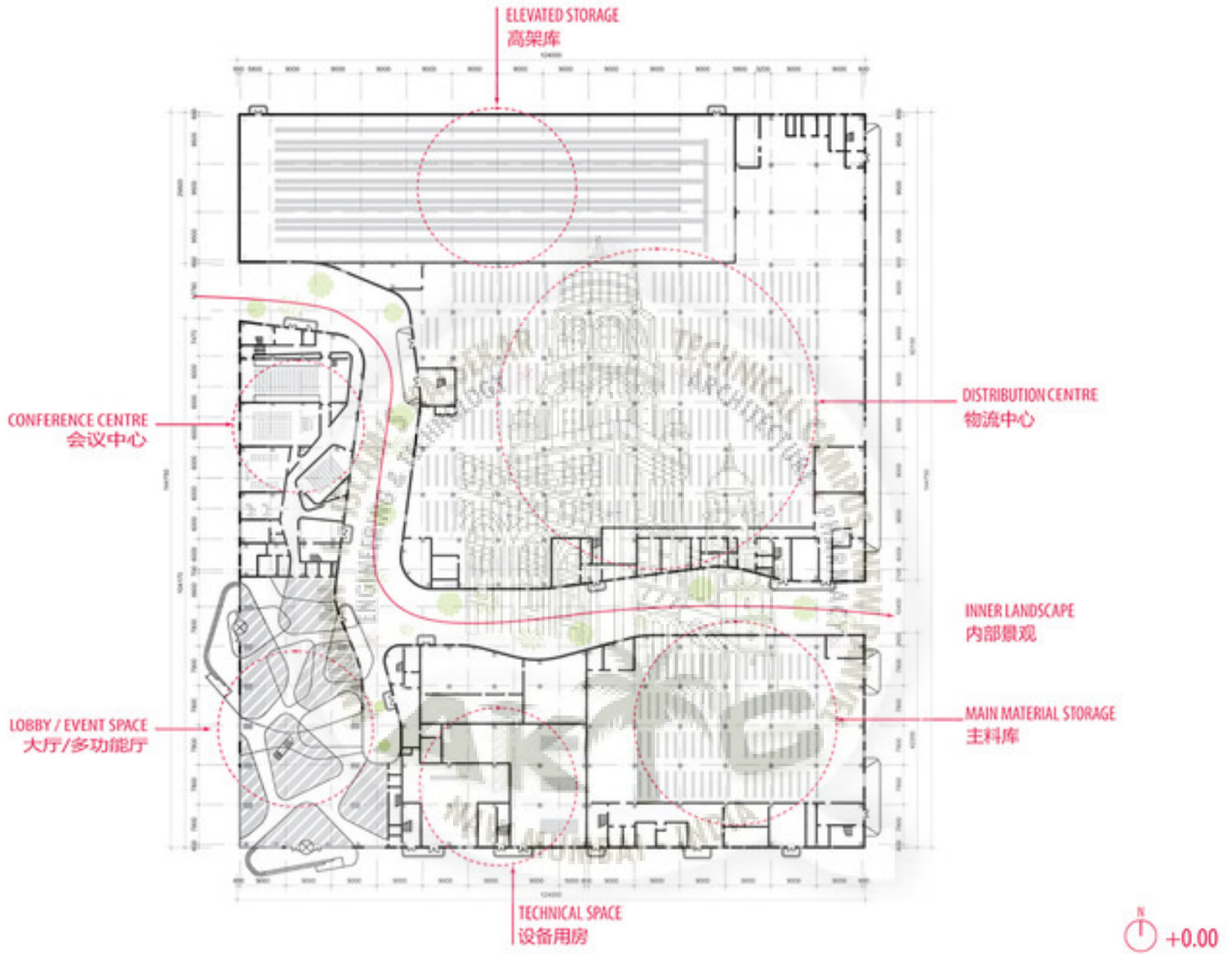
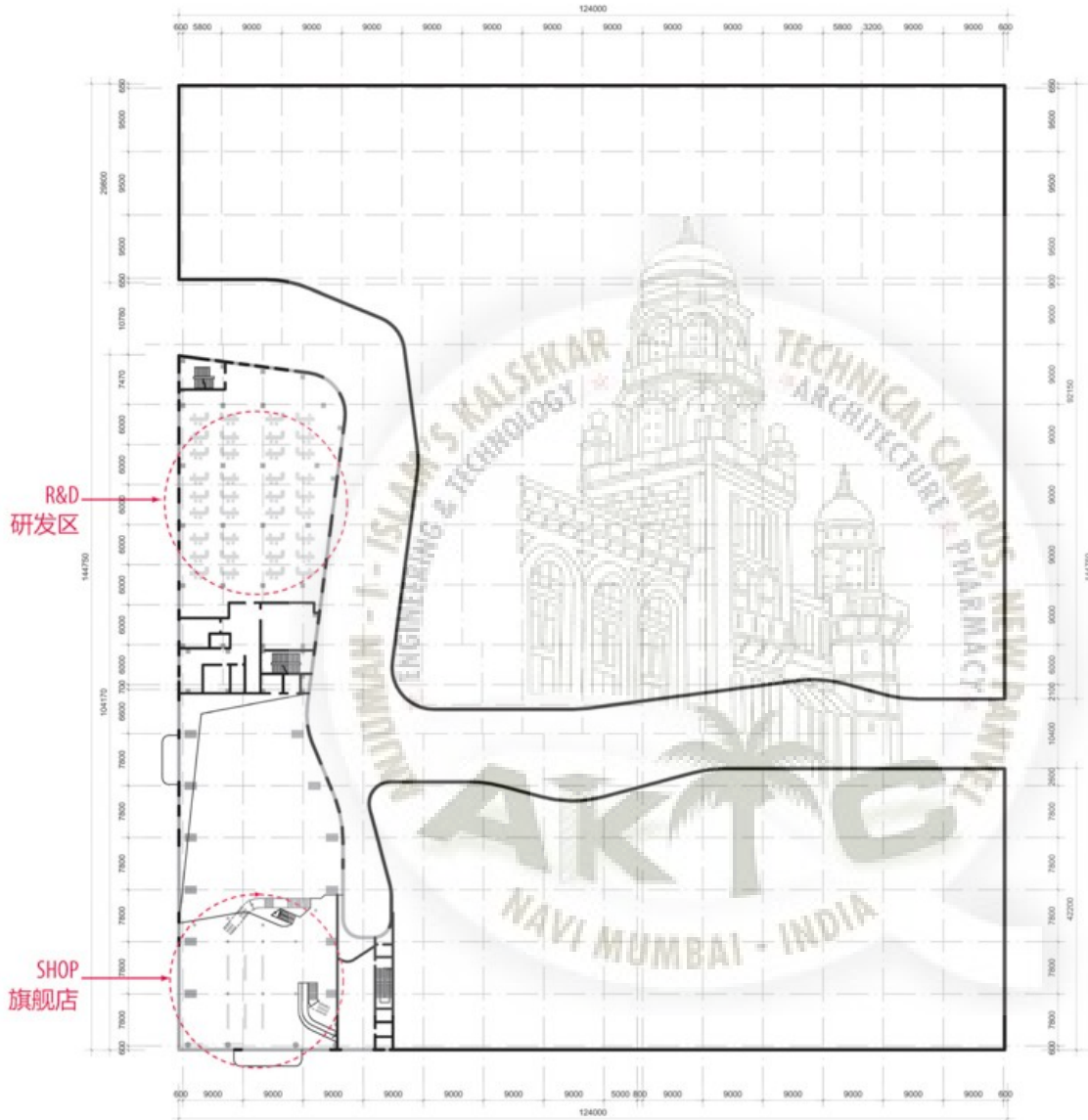


Figure3. 2 Plan of ground level showing various functions of the space and its planning.



Figur 3. 3 Plan of the 1st level of the structure

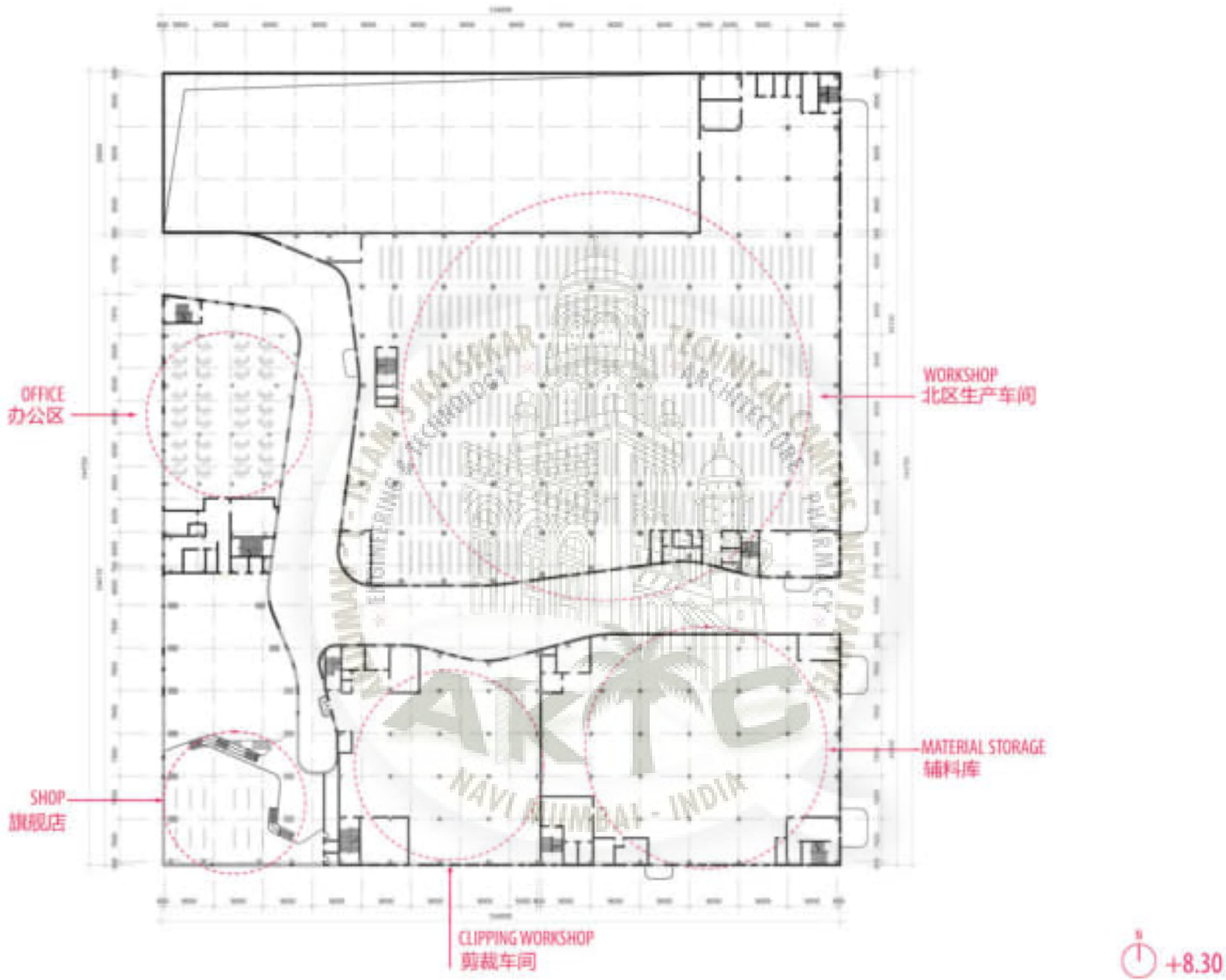


Figure3. 4 Plan of 2nd level showing various functions of the space and its planning.

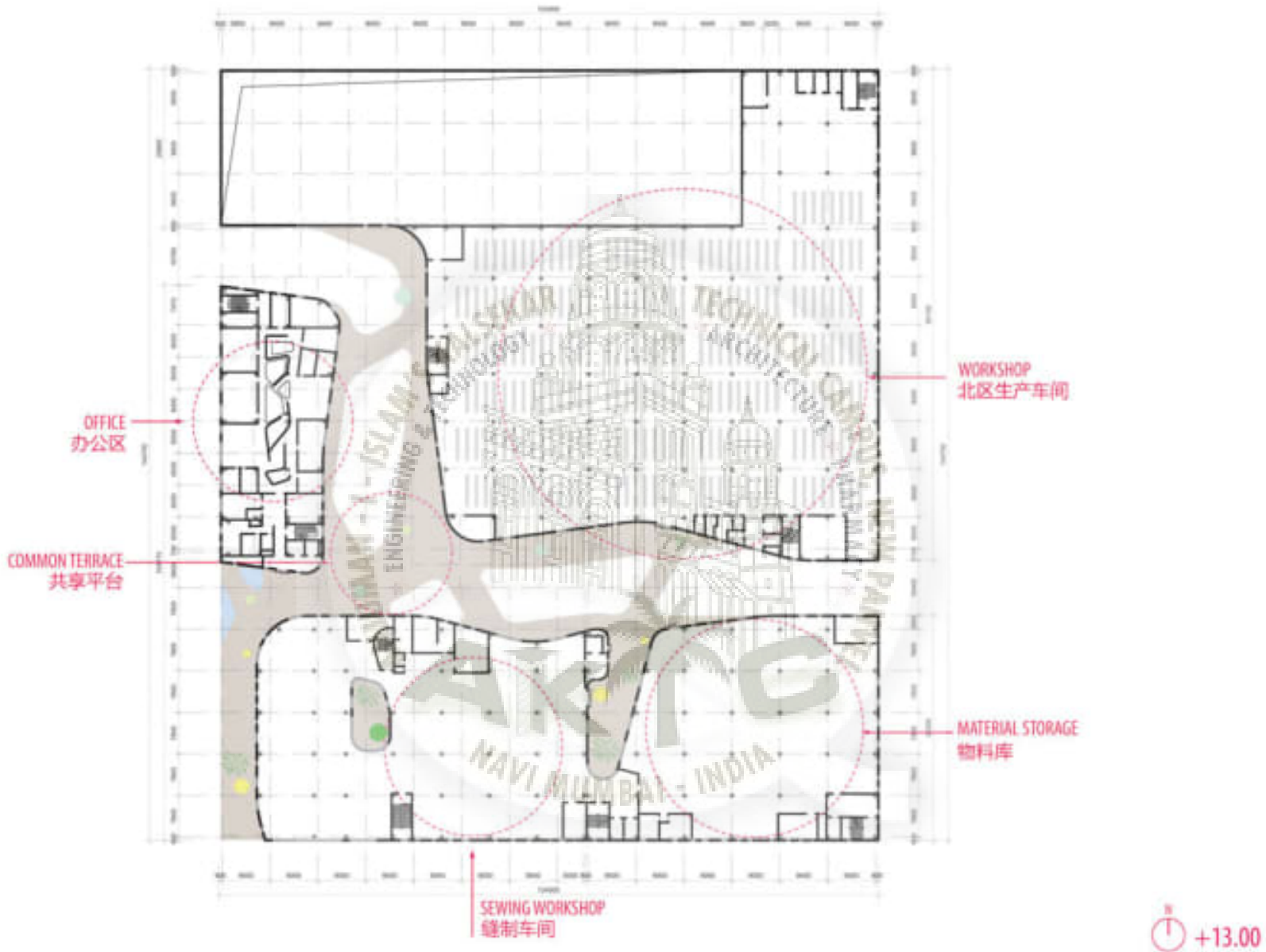


Figure3. 5 Plan of 3rd level showing various functions of the space and its planning.

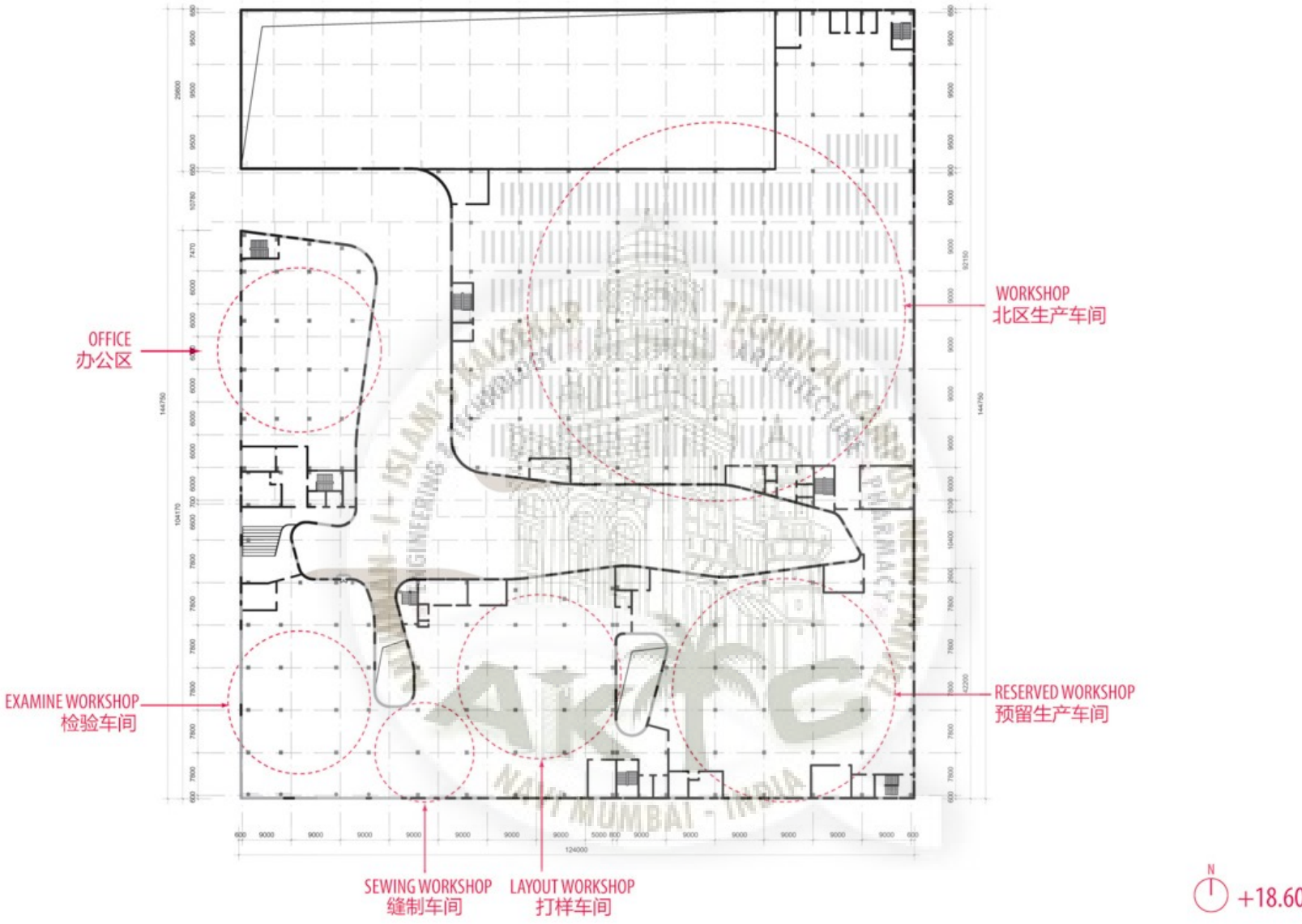


Figure3. 6 Plan of 4th level showing various functions of the space and its planning.