

PROPOSAL FOR DESIGN SCHOOL AT NAVI MUMBAI

Proposal for Design School at Navi-Mumbai

2 PREFACE

This report is a part of the design proposal undertaken by me as a part of my Final Year Studies in Architecture. It has presented a wonder opportunity to me to study various facets and development in the world of design. The proposal tries to address a strong need of the hour in the said context, and suggests a viable architectural and functional solution to address the same.

Being a design student myself, the proposal takes seed from what I expect and desire from my learning environments. After spending 5 years in the process of trying to learn about making spaces for others, I am making an attempt to do the same for people like me. A great optimist of the rising India story, I believe initiatives like these can help guide India in the process of nation-building. I feel it is necessary for academic ideas and initiatives to reach out to the general public.

Witnessing a new wave of design styles and philosophies and being fortunate to get a first-hand experience of the related issues, I have tried to include what little I have learnt and grasped from the modern make-yourself culture. I have also tried to experiment with the thoughts and ideas of mass-customizations, which appear to be the future in design practices. At the same time, I chose to stay strictly within the realms of pragmatic approaches and solutions.

I would like to thank the singular most influential person on the work, my mentor and guide Mrs. Mridula Pillai Gudekar. Her keen interest in the topic and eagerness to help, has made it possible for me to complete the report.

3 ACKNOWLEDGEMENTS

As this thesis is presented, I am grateful to a number of people who helped with the conception, formulation and articulation of the work. I would like to express my deepest gratitude to my supervisors, interview participants, my close family and friends for their valuable contribution. This thesis could not be completed without their support. Sincere thanks for the extensive assistance, guidance, constructive feedback, valuable criticism and encouragement of my principal supervisor Ar. Arvind Khanolkar.

I would like to thank my guide Ar. Mridula Pillai Gudekar who helped with the conception, formulation and articulation of the thesis work. I would like to mention the teaching, library and non-teaching staff at the L. S. Raheja School of Architecture. Special thanks to my colleague Akshay Kore, Sarvesh Alshi, Nishant Pandav and Manasi Londhe for contributing towards completion of work.

I wish to extend my gratitude to all individual and organizations that provided their time and valuable experiences. I would like to thank my parents, other family members, all teachers, guides, friends, colleagues, well-wishers, critics, patrons and the World Wide Web for the successful completion of this study.

4 ABSTRACT

AIM

The aim of this topic is to propose the need for a design school in the Mumbai Metropolitan Region, and study and design an appropriate spatial solution and method of construction for a constantly changing building environment.

OBJECTIVE

- To study and understand the Indian market and the impact of design education in the process of nation-building.
- To present the need of a design school in Mumbai Metropolitan Region.
- The principle objective is to provide an appropriate space for learning.
- To study what will be required to incorporate such spaces and technology.
- To study and learn the merits and demerits of current design schools.
- To understand the different users of the space make suitable provisions for all members to run smoothly, ensuring the needs of all are satisfied.
- To make provisions for the institute management to allow major alterations to the facility at a future stage.

METHODOLOGY

- Analysing the Indian economy and potential growth areas.
- Understanding the importance of design education and its current situation in India.
- Doing case studies of educational institutions.
- Identifying areas which need attention and need to be improved.
- Identifying the sites for design.
- Doing site analysis and a comparative analysis of the site options and finalizing the site.
- Forming a design program answering the needs of the market.
- Analysing construction methods and its merits and demerits.
- Design development.

LIMITATIONS AND CONSTRAINTS

- The topic in no way aims at challenging the education system of India.
- All foreign case studies are paper case studies using books and internet.
- An experimental process of construction has been proposed which may not be ideal for real building solutions at the current stage.

5 TABLE OF CONTENTS

1	Certificate	i
2	Preface	v
3	Acknowledgements	vi
4	Abstract	vii
5	Table of Contents.....	viii
6	Introduction.....	2
7	India - A New Playground	3
8	Project Proposal	8
9	Project Justification.....	10
9.1	State of the Developing Economy	10
9.2	Role of a Design Sector in an Economy	15
9.3	Assessment of the Impact of the Design Sector in Other Economies.....	21
9.3.1	Japan.....	22
9.3.2	Brazil	23
9.3.3	Finland	26
9.3.4	Europe & USA	28
9.4	History of Design in India	31
9.5	Current Situation	33
9.6	Need for Rejuvenating the Design Sector in India, and its objectives	41
10	Design Sector in India.....	45
10.1	The Habitat for a Thriving Design Sector	45
10.2	Scope for Designers in India	48
10.3	Existing Design Schools and other Design Activities	53
10.3.1	Educational Institutes	55
10.3.2	Private and Government Organizations.....	67
10.3.3	Government Policies.....	72
10.3.4	Awards and Recognition.....	74
10.4	Shortage of Designers	75
11	Project Details.....	82
11.1	Introduction Maharashtra/MMR	82
11.2	Lack of Design School in the Locality	95
11.3	Introduction to Airoli	97
11.4	Site Analysis	102
11.5	Estimated Requirements of Designers	104
11.6	Faculties Proposal	108
11.7	Programs and Facilities	116
11.7.1	Analysis of Courses.....	117
11.7.2	Incubation Cells	120
11.8	Institute Capacity Proposal.....	123
11.9	Area Statement	128

11.10	Institute Objective.....	131
12	Understanding Design Schools	132
12.1	Introduction to Design Schools	132
12.2	Activities in a Design School.....	135
12.2.1	Academic:	135
12.2.2	Institutional:.....	137
12.3	Case Studies	138
12.3.1	National Institute of Design, Ahmedabad.....	138
12.3.2	IIT-IDC, Mumbai	146
12.3.3	Pearl Academy, Jaipur	152
12.3.4	Bauhaus, Dessau.....	159
13	Design	167
13.1	Departmental Requirements	167
13.2	Design Objective	170
13.3	Design Concepts.....	171
13.3.1	Modern Requirements of Space	171
13.3.2	Built and Unbuilt	173
13.3.3	Customizability	174
13.3.4	Flexibility	176
13.3.5	Modularity.....	179
13.3.6	Planning (Circulation)	181
14	Design	183
15	Conclusion.....	185
16	Appendix A	186
17	Appendix B	192
18	Bibliography	198

Proposal for Design School at Navi-Mumbai

6 INTRODUCTION

Design education is a somewhat neglected field of education India. It offers tremendous scope for growth in the current state of economic growth. The institutes established have been successful and are rated amongst the top design schools world-over. Design has however failed to secure a strong foothold in the eyes of the average Indian as a viable career choice. This is reflected in the scant dispersal of such institutes, especially when viewed in comparison to other fields of education.

Even from the point of view of the country, the design industry contributes in a great way to the overall output of the nation. It also improves the efficiency in overall functioning of the society. Other services by the design industry provides an equal platform to all entrepreneurs so that they can create products and services that will benefit all sections of the society. An advanced design industry has come to become an identity of a successful economy, and has driven businesses and improved lives for people.

Despite the immense contributions by design practices, they often go unnoticed. This project aims to address this problem and propose an institute providing not just quality education, but also important design and community services, in the up and coming urban area of Navi Mumbai. The site provides an ideal situation of being a hub for education and also a haven for businesses from the financial capital of Mumbai.

The project undertakes understanding the existing design industry - its structure, scale and components. It also undertakes a detailed study and analysis of existing design schools. A suitable program for the planned institute is arrived at from the analysis.

The design shall also take into consideration the dynamic nature of design practices and try to create an inspiring and motivating space for design education and propagation. After understanding the needs of the design schools from existing examples, the design aspires to be a practical, viable and benchmark setting program.

7 INDIA - A NEW PLAYGROUND

India is currently the 12th largest economy and is expected to be the 4th largest by 2030. India has been one of the fastest growing economies in the world for the past two decades and looks a promising place for the coming years as well. India made a radical break in 1991 from its past policies of inward orientation and started a process of opening up to trade and foreign investment. The growth response emerged a decade later as the cumulative impact of the gradual reforms began to be felt on the investment environment. India's GDP growth was of the order of eight-plus per cent per annum during 2001-11.

	2011		2030		2050	
1	USA	15,094	China	30,634	China	53,856
2	China	11,347	USA	23,376	USA	37,998
3	India	4,531	India	13,716	India	34,704
4	Japan	4,381	Japan	5,842	Brazil	8,825
5	Germany	3,221	Russia	5,308	Japan	8,065
6	Russia	3,031	Brazil	4,685	Russia	8,013
7	Brazil	2,305	Germany	4,118	Mexico	7,409
8	France	2,303	Mexico	3,662	Indonesia	6,346
9	UK	2,287	UK	3,499	Germany	5,822
10	Italy	1,979	France	3,427	France	5,714

Table 7.1: Current and projected size of economies by their ranking

In the 1950s and 1960s, India tried to modernize by creating a "mixed" economic model, between capitalism and communism. This meant a shackled and over-regulated private sector, and a massively inefficient and corrupt public sector. The results were poor, and in the 1970s, as India became more socialist, they became disastrous. In 1960 India had a higher per capita GDP than China; today it is less than half of China's. China has raced past with its strict governance and focused planning and execution, but India is also catching up some steam which it had lost.

Some points about the Indian way of growth which have to be acknowledged for its daring execution are that India started economic reforms 20 years after China and has performed very well, actually beyond the expectations of many. Reforms in India were gradual because in a democracy you have to build consensus along the way. The reforms were carried out at the national level and in the different states by a number of different political parties and their combinations that were in power. The result is that reforms have acquired wide ownership across the political spectrum. This is very important in a democracy. The success of Indians in the IT sector in the industrialised world, particularly the US, and

the development of a vibrant and competitive IT industry in Bangalore and around, meant that NRIs (Non-Resident Indians) and their Indian partners in the IT sector became an important voice for modernising the Indian economy and helping it to become globally competitive. The private sector has been a major player in the Indian growth story. The acceleration in economic growth was led by the private sector. The Indian private sector waited and watched the reforms unfold in the 1990s. Once they were convinced that reforms are there to stay, the decade of 2001-2011 saw a strong pick up in private investment. The success of IT was followed by the promise in financial services and health services. Pharmaceuticals, auto components and later the automotive sector have showed their competitive strength. Slowly scepticism gave way to confidence.

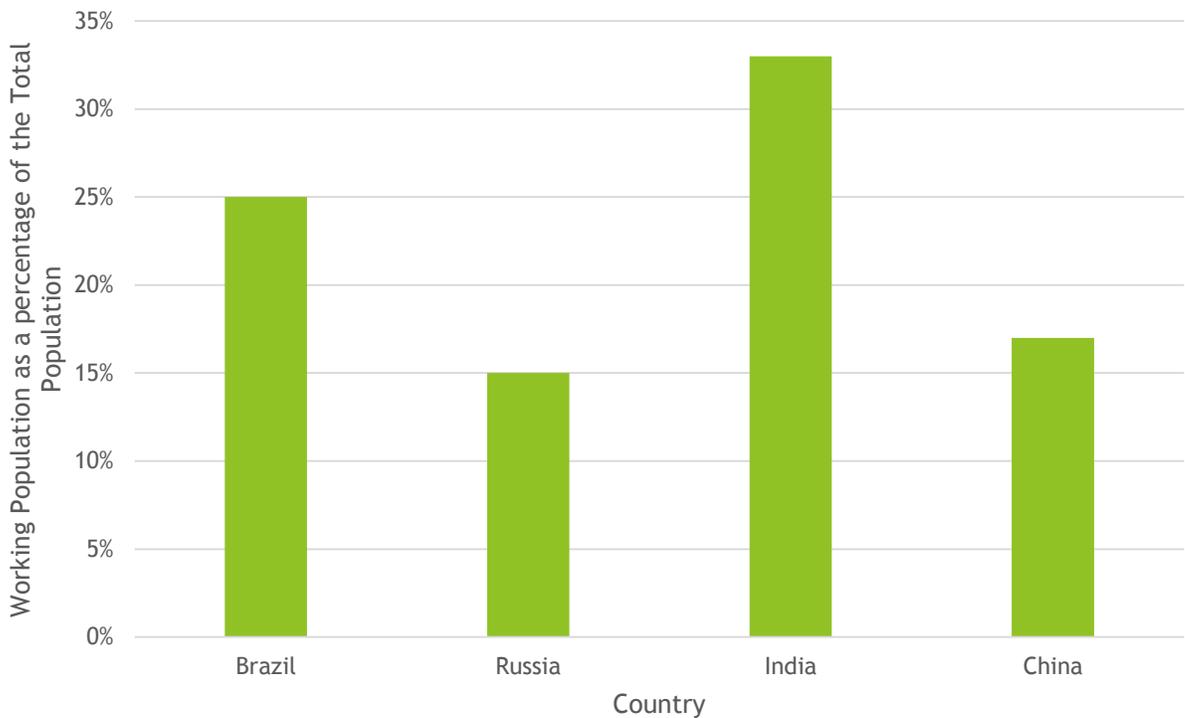


Figure 7.1: Working Population Proportion

Demographic opportunity is yet another strong point: Today, 50 per cent of India's population is under 25 years of age. Those who were born in 1991 when economic reforms were launched have turned 21. Aspirations are rising. The Demographic Opportunity is increasing for India because the percentage of population of working age will continue to increase for another 40 years. This must be exploited with greater focus on skill building, higher education, innovation, knowledge creation, and knowledge sharing.

In a tectonic shift, by 2030, Asia will have surpassed North America and Europe combined in terms of global power, based upon GDP, population size, military spending, and technological investment, with India and China being the main forces driving the shift of global power drawing it eastwards. In turn of these events and facts, India poses as one of the foremost contenders to be the next global leader to direct human growth. With such a favourable mood for the growth of the nation, it has attracted attention from all over the world, which can mean a boom in domestic produce and activities in the near future. In such a scenario, the ones who are most likely to benefit is the domestic Indian market and the common man in India. With different sectors opening up in India, there is a huge potential for growth of the nation, and all willing participants are likely to gain from it.

In this respect India, one of the poorest countries in the world, looks strikingly similar to the world's wealthiest country, the United States of America.

The IT sector has been India's sunshine sector for quite some time now. The industry has contributed considerably to changing India's image from a slow developing economy to a global player in providing world class technology solutions. The IT industry is only likely to expand, with the overall dependency of the world on this field. Indian companies have established a name for themselves on the global market, which has made it very attractive for business. Industry experts and NASSCOM say the Indian IT workforce will touch 30 million by 2020, becoming the highest sector employer. This will be coupled with steady increase in pay in a sector already offering a high base. The outsourcing industry too is looking towards India and is expected to be a \$2.5 billion industry in the next 24 months.

India's telecom story is only getting better. India already has nearly 850 million mobile phone subscribers, with a 15% smart phone penetration. All this points to a penetration that is fuelling the growth of enterprise mobility in India, which will lead to significant employment growth. The Telecom Regulatory Authority of India too is targeting a 10-fold increase in broadband subscribers to 100 million by 2014. Outsourcing revenues from the telecom sector, are set to grow at a CAGR of 31% to nearly \$2 billion in 2012. India today is at a stage in telecom growth that probably America was 30 years ago. Our mobile and Internet penetration has to increase further, resulting in a new era in enterprise mobility.

Healthcare is likely to be a major sector that stimulates economic growth and contribute to employment. Over 40 million new jobs are expected to be generated in this sector by 2020. The Indian healthcare industry also has advantages over other developing

countries in becoming a global hub for medical tourism. The medical treatment and educational services in India are a fraction of the cost in developed countries. While we may lag in molecule development and drug patents, an increasing disposable income has led to a strong domestic market potential in India. This will result in significant employment generation across various functions, such as sales, marketing, HR, IT and operations, within the industry.

India's infrastructure growth has been exponential over the past decade. Today, we are the fourth largest and probably the second-fastest growing economy, with infrastructure being one of the cornerstones. The infrastructure industry in India is highly fragmented and hence difficult to gauge its exact size and the jobs it generates each year in absolute terms. However, be it roads and highways, railways, aviation, shipping, energy, power or oil & gas, the Indian government and the various state governments seem to be making rapid progress. This has led to significant employment generation, though a majority of it is still in the unorganised sector. Over the next 10 years, the infrastructure sector in India will need to continue its growth momentum and is likely to maintain a growth rate anywhere between 7-10%. Urbanisation presents a huge opportunity with large investment needs - US\$800 billion over the next 20 years. Public Private Partnerships will play a major role in these investments.

The retail sector has grabbed headlines with talks of 100% FDI in single brand retail, which is currently capped at 51%. While the outcome is still undecided, the opening up of India's retail will create a stronger, organised industry that will help in generating employment. Today, only a small part of retail in India is organised. Despite this, it is estimated that the sector in India is worth more than \$400 billion, with domestic and international players planning to expand across the country. Industry leaders predict that the next phase of growth will emerge from rural markets. There are projections of the workforce doubling by 2015, from the current five lakhs in both organised and unorganised sector.

For over half a decade now, India has been chanting the demographic mantra with little real progress. The services sector needs many million knowledge workers. Lack of employability is endemic. India's large labour force has been stubborn in transition. Over 90% of the labour force is inadequately trained. India cannot afford to waste its biggest advantage of man-power. It has to best utilize its population by ensuring it breeds a well-educated and skilled human resource. Jobs continue to be created, needing an educated workforce and

many in sunrise sub-sectors. We need to recognise new opportunities and prepare the supply side. To do this India will need to boost its educational system, both attainment and quality at lower levels; make substantial governance improvements, particularly in countering corruption; and undertake large-scale infrastructure program to keep pace with rapid urbanization and the needs of a more advanced economy. (McKinsey & Company, Inc. 2009)

8 PROJECT PROPOSAL

India has the world's youngest workforce, with a median age below that of China's and other OECD countries. By 2030, 50% of India's population will be under 28 making India a very young country for the next 20 years at least. The importance of an able workforce is well-acknowledge as an important factor for national growth and can be considered as one the chief national resource of a nation. It is important that this the services from a nation's population be best utilized and proper education can help achieve that. From the nation's point of view it is also essential that professionals are trained in various sectors and there is a continuous supply of trained manpower in all fields.

With India developing in the world as a strong manufacturing hub, it seems essential that the talent pool of our nation has a rich and talented resource of designers. However, very little creative content has been indigenous. Often, we hear the case of designs and techniques, imported into our nation just to be replicated. Such actions dilute the identity of nation. In spite of harboring a rich talent pool, the resources are largely untapped. The improving economy of our nation ensures a conducive environment for the growth of such designers. The economic setup in our nation will also be greatly be benefited by this. The industry currently faces a shortage of designers despite the high demand for such professionals.

In the background of this situation a proposition for a Design School to nurture talent, and assist the country in its growth is made here. The observation and analysis of the current Indian economy suggests the need for such institutes to be developed and run by private institutes to create a sustainable model and pattern to propagates the cause. The institutes flourish in areas of related activity, and the hot-bed of Navi Mumbai proves a fertile ground for a design school to take roots. The local industry, which has soaked the state and national attention, may also be one of the benefactors of any such initiative.

Analyzing the needs of the institute and its users a modular approach to construction has been devised and proposed. The construction technique aims to provide a flexible built environment, expecting it to see constant changes. The project scope will undertake developing a complex exhibiting variety in spaces, to prove the functionality of the modular design approach. It would be an institute on the lines of the National Institute of Design

and shall have spaces for lectures, workshops, performing arts, exhibitions and related office areas. It will give a fair opportunity to justify the usage of a modular design approach in various environments.

9 PROJECT JUSTIFICATION

9.1 STATE OF THE DEVELOPING ECONOMY

At the crossing of this millennium, India has been the second fastest-growing country in the world--after China--averaging above 6 percent growth per year. While China's rise is already here and palpable, India's is still more a tale of the future, but a future that is coming into sharp focus. A much-cited 2003 study by Goldman Sachs projects that over the next 50 years, India will be the fastest-growing of the world's major economies largely because its work force will not age as fast as the others. The report calculates that in 10 years India's economy will be larger than Italy's and in 15 years will have overtaken Britain's. By 2040 it will boast the world's third largest economy. By 2050 it will be five times the size of Japan's and its per capita income will have risen to 35 times its current level.

CATEGORIES	BRAZIL	RUSSIA	INDIA	CHINA
Area	5th	1st	7th	3rd
Population	5th	9th	2nd	1st
Population Growth Rate	131st	192nd	89th	152nd
Labour Force	5th	7th	2nd	1st
GDP (PPP)	7th	6th	3rd	2nd
GDP (PPP) Per Capita	75th	55th	126th	94th
GDP Growth Rate	147th	100th	34th	18th
Exports	6th	10th	20th	1st
Imports	21st	17th	10th	2nd
Received FDI	13th	17th	23rd	9th
Electricity Consumption	9th	3rd	4th	1st
Renewable Energy Source	3rd	5th	6th	1st
Number Of Mobile Phones	4th	5th	2nd	1st
Number Of Internet Users	5th	6th	3rd	1st
Motor Vehicle Production	7th	11th	6th	1st
Military Expenditures	11th	3rd	8th	2nd
Rail Network	10th	2nd	4th	3rd
Road Network	4th	7th	3rd	2nd

1 : Comparison statistics for the BRIC countries

That is the future expected. But, if we turn our backs and look at the past, we are yet surprised to see how far we have reached from the days of our colonial existence. The conception of India which was held in the words were spoken by the country's first prime minister, Jawaharlal Nehru, just after midnight, on Aug. 15, 1947, when independent India was born was referring to, the birth of India as an independent state. What is happening

today is the birth of India as an independent society--boisterous, colourful, open, vibrant and, above all, ready for change. India is diverging from its past, but also from most other countries in Asia. The promise shown by the people is only complimented by the abundant natural resource and a critical global role. In terms of populations, India may even have an edge over the rest of the world, as India largely has a population, which is still within their productive ages, or entering it.

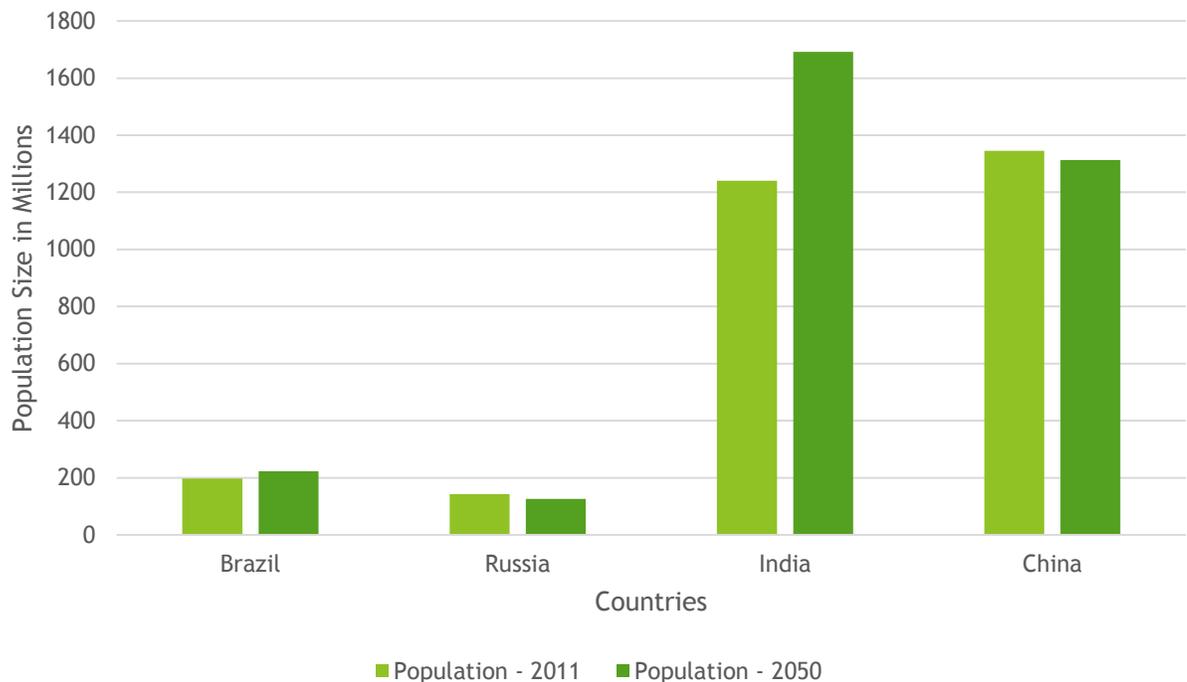


Figure 9-1: Population size comparison

Even the here and now is impressive. Indian companies are growing at an extraordinary pace, posting yearly gains of 15, 20 and 25 percent. The Tata group, the country's largest business house, is a far-flung conglomerate that makes everything from cars and steel to software and consulting systems. In this sense, it is a useful window on India's industrial and post-industrial economy. Its revenues grew last year from \$17 billion to \$24 billion and it is heading for extremely strong growth this year. At another end of the scale, the automobile-parts business is made up of hundreds of small companies. Five years ago the industry's total revenues were \$4 billion. This year they will exceed \$10 billion. In 2008, General Motors alone will import \$1 billion of auto components from India. One may only expect to see more such businesses emerging from this behemoth the world knows as India.

At this point, anyone who has actually been to India will probably be puzzled. "India?" he or she will say. "With its dilapidated airports, crumbling roads, vast slums and impoverished villages? We're talking about that India?" Yes, that, too, is India. The country might have several Silicon Valleys, but it also has three Nigerias within it, more than 300 million people living on less than a dollar a day. India is home to 40 percent of the world's poor and the second largest HIV population. But that is the familiar India, the India of poverty and disease. The India of the future contains all this but also something new. You can feel the change even in the midst of the slums.

India's growth is messy, chaotic and largely unplanned. It is not top-down but bottom-up. It is happening not because of the government, but largely despite it. India does not have Beijing and Shanghai's gleaming infrastructure, and it does not have a government that rolls out the red carpet for foreign investment--no government in democratic India would have those kinds of powers anyway. But it has vast and growing numbers of entrepreneurs who want to make money. India has a real and deep private sector.

The Indian consumer is also rearing for action. Most Asian success stories have been ones in which the government forces its people to save, producing growth through capital accumulation and market-friendly policies. In India, the individual is king. Young Indian professionals don't wait to buy a house at the end of their lives with their savings.

Personal consumption makes up a staggering 67 percent of GDP in India, much higher than China (42 percent) or any other Asian country. Only the United States is higher at 70 percent.

Statistics don't quite capture what is happening. Indians, at least in urban areas, are bursting with enthusiasm. Indian businessmen are giddy about their prospects. Indian designers and artists speak of extending their influence across the globe. Bollywood movie stars want to grow their audience abroad from their "base" of half a billion fans. It is as if hundreds of millions of people have suddenly discovered the keys to unlock their potential. A famous Indian once put it eloquently, "A moment comes, which comes but rarely in history, when we step out from the old to the new, when an age ends and when the soul of a nation, long suppressed, finds utterance."

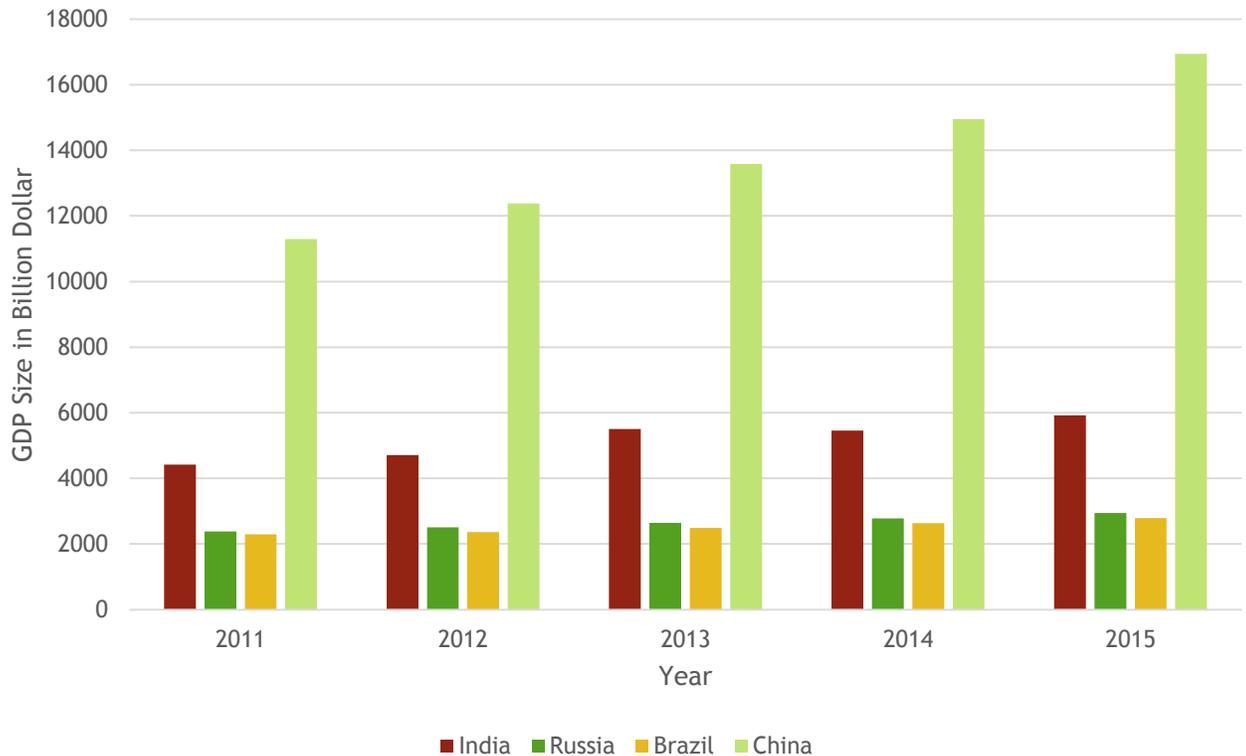


Figure 9-2: Short Term BRIC Nations GDP Projection

Infrastructure in India is slowly getting better and will be funded through public-private partnerships. India's two major airports will be privatized and improve dramatically. Every week one can read about a set of regulations that have been eased or permissions that have been eliminated. These "stealth reforms," too small to draw vigorous opposition from the unreconstructed left, add up. And India's pro-reform constituency keeps growing. The middle class is already 300 million strong. Urban India is not all of India, but it is a large and influential chunk of it.

The notable thing about India's rise is not that it is new, but that its path has been unique. Rather than adopting the classic Asian strategy -- exporting labour-intensive, low-priced manufactured goods to the West -- India has relied on its domestic market more than exports, consumption more than investment, services more than industry, and high-tech more than low-skilled manufacturing. This approach has meant that the Indian economy has been mostly insulated from global downturns, showing a degree of stability that is as

impressive as the rate of its expansion. The consumption-driven model is also more people-friendly than other development strategies.

The world turns and India will have its ups and downs. But today it is India's moment. It can grasp it and forge a new path for itself. Along that road lies a genuine and deep relationship between the planet's largest democracy and its wealthiest democracy. Until now, this has merely been a slogan. It could actually become a reality.

9.2 ROLE OF A DESIGN SECTOR IN AN ECONOMY

The term 'design' is used in many fields. We talk of design in Architecture, Engineering, Craft, Textiles and Jewellery etc. all of which deal with physical objects. The word used in fields dealing essentially with intangible entities like Computer aided design, System design, 'Information design' and Fashion design. The definition of 'Design' is probably best explained by the following statement by Peter Lawrence, "Design is the term we use to describe both the process and the result of giving tangible form to human ideas. Design just doesn't contribute to the quality of life; design in many ways now constitutes the quality of life."

It is necessary to understand 'Design' as a 'creative force', functioning with the technological and socio-political structures of a society. Conducive structures of society can enable 'Design' to mould society for better 'values'. Thus 'design' has a fundamental role of questioning and assimilating technological advancement for better quality of life in the society. A design sector and its value system and the contributions that it can make is critical in the building of the nation. Value oriented benefits of product innovation to the society, is not the only reason to promote design activity. It has far reaching influence on export and economic growth. International trade has long since shifted from raw materials to processed products. It is the design and the technological capabilities that give the competitive edge to the products in international market. The design sector can become an equal partner in the journey of nation building along with the other streams of knowledge and expertise.

However, it often happens that the contribution of design is over-looked since most of it is intangible and hence cannot be quantified by which it can be comprehended by a lay person and often takes a long time before its impact can be acknowledged. It might be difficult for a lay person to comprehend as to how 'Design' - a sector considered as a luxury industry - can have any great influence, as he himself get barely any exposure to its process. However it is an omnipresent fact which influences almost all the activities of modern day civilizations, and improvisation for this can improve the productivity and quality of life for entire populations.

The list of areas where proper design education can have an impact is endless. In order to channelize the collective information held by our society it is important to divide the processes which the economic progress into smaller units, and try to improvise in each of this sectors. It is in this process that proper design training and input can have the

maximum impact for the betterment of the society, and we shall try to look at them individually.

Design is a tool which can be utilized for improvised governance. To cite an example we can imagine that the administrative authorities will make plans in a coordinated manner and our new schemes, programs, policies and decisions will be thought through rigorous design exercises where a number of situations would be analysed in detail as well as be shared with those in question such that even they can understand before they are implemented with speed and precision to save money and time. It will also save some humiliation that comes from the discovery of faults at a later stage. Overall, it can help to bring in greater transparency and accountability. The results can be shared with the public and their feedback is incorporated in their process of implementation, which can involve the people in the process of nation-building. A lot of redundancy in work and common understanding between different fields can improve the overall efficiency of the entire process which drives the economy.

The interviews of over 300 executives of leading U.S. companies indicate that in small companies every dollar invested in design activity fetches a return of 1600% in sale. The returns are even higher in bigger companies. The poll also concludes that the contribution of a designer is estimated to be 60% in success of the product and is even higher in smaller business. The benefits of design are not yet fully recognised by businesses, in particular small and medium-sized enterprises, who remain sceptical in relation to the cost-benefit of investments in this area. It is also well known that they lack resources (both human and financial) to invest in creative and research areas. Investments in design are often seen as extra costs that can be avoided using internal capability. The result is usually poor quality of products/services and ultimately business failure.

Observing its impact at a micro-level we can begin to estimate the usefulness of carefully thought design inputs at a macro-level, which may not seem essential at first, but may seem indispensable once its effects are understood. The smaller synergies add-up on a greater scale, and improves the quality of living for an entire nation. Proper design thought at a micro-level inculcated into business practices, can mean establishing a better business conduct and improve the nation's standing on the international level.

Innovation is increasingly dependent on engineering and technological research than ever before. The technological and the engineering contents are increasing rapidly, even in

areas which were highly traditional. For instance textiles, fashion and footwear, furniture, sports and musical instruments have changed their complexion with new technological inputs. For a nation to be competitive on the global platform, it is necessary to match the international standards and innovate. The designers need to work in collaboration with the technical experts and vice-versa, to achieve high quality results. The technical workforce also should be able to connect with design trends from within and outside our country, to participate in the process of nation-building.

Design has the singular power to address any given problem. A process of study, analysis, ideation and finally approaching the solution has become the backbone of our institutionalized society. As it not a computational problem, this process needs human involvement at all stages, and it is only a human who can aim to resolve it. This human involvement makes it a very dynamic process, and elevates the whole process to the level of craft. The whole process is a celebration of the peculiar human skill of craft and art. The knowledge gained in this craft is essential and forms the fundamentals on which society exists. It is hence an important duty to spread the knowledge and ensure maximum people benefit from this. This important duty is done by the schools imparting the collective knowledge, and establishing standards and procedures, which help to streamline the process of nation-building.

Designing often involves rigorous research and analysis, in order to devise mechanisms and processes, which once executed are less likely to fail. An indirect result of such design processes is also that this generation of useful data, which may be further used in several ways, and contribute to the shared national knowledge. The pool of collected data also represents the history of the growth of the nation. Design can be directed towards employment generation. This would have an added benefit of the local talent developing designs with high market potentials as a local designer can better understand and answer to local needs. It can seem to be a perfect solution in an economy, where it is necessary to stimulate industrial activity and also provide employment to people.

Due to the variable nature of design thoughts, a single concept can progress in a multitude of ways. This variability of nature in the design language can also mean many several off-shoots even for a common thought. Differing thought-lines can often progress and establish it independent identities. Although beneficial at the outset, it is also essential that one nation develop a common identity, or at least have a common national flavour, which

includes all the population under its banner. Such targets are exactly why designers are woven into the society. With the skill to see the unseen, and an analytical mind which can estimate the future impacts of current actions, it is essential for society to have a mature class of decision makers to guide the populations, by merging logical reasoning, scientific study and an understanding of the human nature.

Failure in utilization of the assistance of experts, would lead to more haphazard effects and either maximum efficiency cannot be achieved, or in a worse situation, lead to a detrimental effect. Very little distinction can be seen in a society, which fails to recognize its professionals for their skill, and makes random uncontrolled and momentous decision and an anarchy. Design is essential a process and method to devise our environment as per our needs and requirements, with a single or multiple targets. Design aims to maximize the usefulness of the human skill to optimize his collaborative existence in the society. If we fail to employ this innate human skill on a larger level, the purpose of co-existing with the society loses credibility for the individual. (Koshy 2011)

The need of employing design policies at a national level is perfectly explained in the following statement by President Abraham Lincoln

“The legitimate object of government is to do for a community of people, whatever they need to have done, but cannot do at all, or cannot so well do for themselves, in their separate and individual capacities.”

Architectural Design/Planning/Landscape Design	
	Supply Of Designs
	Site Supervision
	Coordination With Contractors And Consultants
	Project Planning
	Project Estimation
	Project Management Services
	Infrastructure Development
	Structural Engineering
	Design Development
	Urban Design
	Environmental Design
	Cost Analysis And Estimates

Interior Design/ Furniture Design	
	Set Design
	Home, Office Interior Design
	Accessories And Furnishings Design
	Residential And Commercial Landscape Designing And Detailing
	Retail Space Design

Fashion Design	
	Textile And Fabric Consulting
	Apparel Designing
	Fashion Consulting
	Jewellery Designing
	Leather Products And Accessories Design
	Trend Research And Reporting
	Corporate Uniform Design

Graphic Design	
	Print Design Such As Brochures, Books, Leaflets, Flyers, Posters Etc.
	Packaging Design
	Branding Strategy
	Visual Communication
	Product Graphics
	POP Graphics
	Website Design

	E-Catalog Design
	Miscellaneous Design Such As Menus, Newsletters, Signage Etc.
	User Experience Definition
	Ergonomics
	Human Factors
	Interaction Design
	Usability Factors

Film & Animation Design

	Character Development
	Animation And Effects
	Web Design & Application Development
	Instruction Design
	Films, Short Films
	Multimedia Solutions

Industrial Design/Automobile Design

	Design Research
	Design Engineering
	Product Definition
	Product Design
	Product Styling
	Product Detailing
	Digital Design Visualization
	Technical Surface Development
	Operational Engineering
	Solid And Surface Modeling
	Mockup Building
	Functional Prototyping
	Service Design
	Furniture And Utility Product Design

Table Error! Use the Home tab to apply 0 to the text that you want to appear here..2: Services provided by the design industry.

9.3 ASSESSMENT OF THE IMPACT OF THE DESIGN SECTOR IN OTHER ECONOMIES

International design standards are a result of several years of careful planning to develop and adopt the new design approach. Reviewing of these developments is essential to understand its implications and can help in framing a system for its implementation.

Design was recognized as a tool for development, especially in export trade, by the governments in industrialized countries as early as the first decade of this century. Most governments continue to believe in promoting design capabilities. It is nicely summed up in Prime Minister Mrs. Thatcher's remarks:

"For the United Kingdom to recover honoured position in the world economy, it is not only required that British industrial products make further progress but also that further improvements be made in design aspects. For this purpose our entire design system including design education should be revised".

Hong Kong further illustrate how design and product innovation can be used not only to ensure industrial growth but also to improve the living standards of people within the country. From a distance, the success of these countries in the international market looks almost instant. However a closer scrutiny reveals the systematic steps to promote new business approach using design as a strategy. Investments in design education, research and design promotion supported by the policy formulations have together contributed to their success. It also stands as a proof of the assured success and an immediate effect of the using design as a tool to improve national production.

Increasing technological progress and international competition have resulted in countries introducing many educational changes in design. Basic and specialized training programs in several design fields started as early as 1930s. 'Bauhaus' in Germany became internationally famous as a school of design. Soon regular courses started in Europe and U.S.A. Today there are innumerable design schools in most developed countries, offering graduate and postgraduate programs in Design. Design introduction at school levels is most significant considering the advanced technologies reaching the school today. (icongrada IDA 2011)

9.3.1 Japan

The Japanese have been at the fore-front of technical innovation, which was a result of their earlier inputs into design research. It is not just the smart marketing and shrewd business approach, but the systematic product innovation and design that underline the Japanese success. Japanese entry into U.S. Consumer electronics market will prove the point further. The reason for popularity of the Japanese consumer electronics products is proof of the impact of design professionals can make, who would work on established models and improvised their products to meet the requirements of the new American lifestyle that made these products popular in the American market. Japanese designers perceived the new trends towards mobility in young American in the sixties and employed innovative technological solutions, to develop products suited for the market. It simultaneously led to great advancements in technological sectors, which was initiated by the designers to fuel growth. The resultant Japanese high-end products came to establish an identity for the Japanese as being very technologically advanced. Japan did go through the process of borrowing technologies and design capabilities in the initial phases. But their example is worth noting for its careful planning of selective investments in research and development efforts.



The Sony Walkman was the result of Japanese design innovation which revolutionized the entertainment industry.



The Toyota Corolla has found global acceptance and is one of the most widely sold cars in the world.

Automobiles, televisions, and mobile phones are just some of the products which have benefited from Japanese design philosophies and are much respected around the world. Over the decades, Japanese companies such as Toyota, Honda, Panasonic, and Canon achieved a sterling reputation for their high quality product and design. An interesting observation of

the Japanese design philosophy is how they have inculcated design the traditional Japanese culture into modern design requirements, to develop an identity for themselves. In this process they have propagated the Japanese culture and tradition beyond its geographical boundaries, to a wider audience, which have come to appreciate and value it. Furthermore, the Japanese design principles have come to come to be accepted at an international level and is also taught outside Japan. The design itself was a reason for its propagation. (Sehgal, Tominaga and Sachan 2010)



Japanese companies Canon and Nikon have managed to be the world leaders in camera technology, due to their constant design improvisations and adaptations.

9.3.2 Brazil

Brazil has witnessed tremendous changes, including significant increases in its economic power and industrial development, and the emergence of design professionals. Accompanying these trends has been the rise of an innovative design sector and a thriving manufacturing industry. The country's relative isolation, fabulous weather and craft-based heritage has given rise to a vibrant, expressive design identity. Designers in São Paulo, Belo Horizonte, and other cities are dedicated to capturing important elements of the domestic culture, creating styles that are uniquely Brazilian. The culture of Brazil is extremely rich and diverse. Portuguese settlers, indigenous societies, and Africans imported through the slave trade all contributed their own unique cultures. This cultural blend created a unique style.

They have successfully tapped the international market of jewellery, by promoting associated industries in the country. This was a conscious decision made after analysing the countries natural resources, which has a wealth of gemstones available. Brazil is one of the

most significant producers of a variety of coloured gemstones. The government put to use its natural resources by promoting the jewellery design sector. In this way, it has been able to generate better revenue by not merely exploiting its natural resources, but also involving the populations in production and establishing an identity for itself in the international market. Brazilian designers are known for combining colored stones to create a rainbow of attractive colours in a single piece. This look has been very popular with the domestic market and is one of the Brazilian style themes recognized worldwide, thanks to a growing export market. The designers have responded to the globalizing market, well by improving the quality of the products coming from Brazil, thereby raising the standard of the international market in jewellery design.

It also presents a good study of how designers have innovated to economize the business chain. The Brazilian jewellery design philosophy also offers an economic advantage that helps offset the rising production costs. If rough gems from the mine are elongated, or have some other shape that would result in substantial weight loss for standard cuts, the designers incorporate them in a way that retains a larger percentage of the stone's original weight. Brazilian jewellery makers can compete against lower labour costs elsewhere by incorporating unique designs and frequently introducing new lines. The manufacturing equipment and techniques are also constantly being updated and refined. It has also incorporated newer materials, into the thereby spurring even more economic activity. While 18K yellow gold is the standard metal for Brazilian jewellery, 18K white and rose gold have

CHANNELIZING THEIR RESOURCES

- *Brazilians have successfully tapped the international market of jewellery, by promoting associated industries in the country.*
- *This was a conscious decision made after analysing the countries natural resources, which has a wealth of gemstones available.*
- *Brazil is one of the most significant producers of a variety of coloured gemstones.*
- *The government put to use its natural resources by promoting the jewelry design sector.*
- *In this way, it has been able to generate better revenue by not merely exploiting its natural resources, but also involving the populations in production and establishing an identity for itself in the international market.*

been gaining popularity. The use of silver has been increased because its lower cost helps maintain the right price points for the domestic market. The future of the Brazilian designer jewellery industry looks very promising. The country's vast gem wealth lends itself to custom jewellery designs with an innovative style that incorporates Brazilian culture and natural beauty.

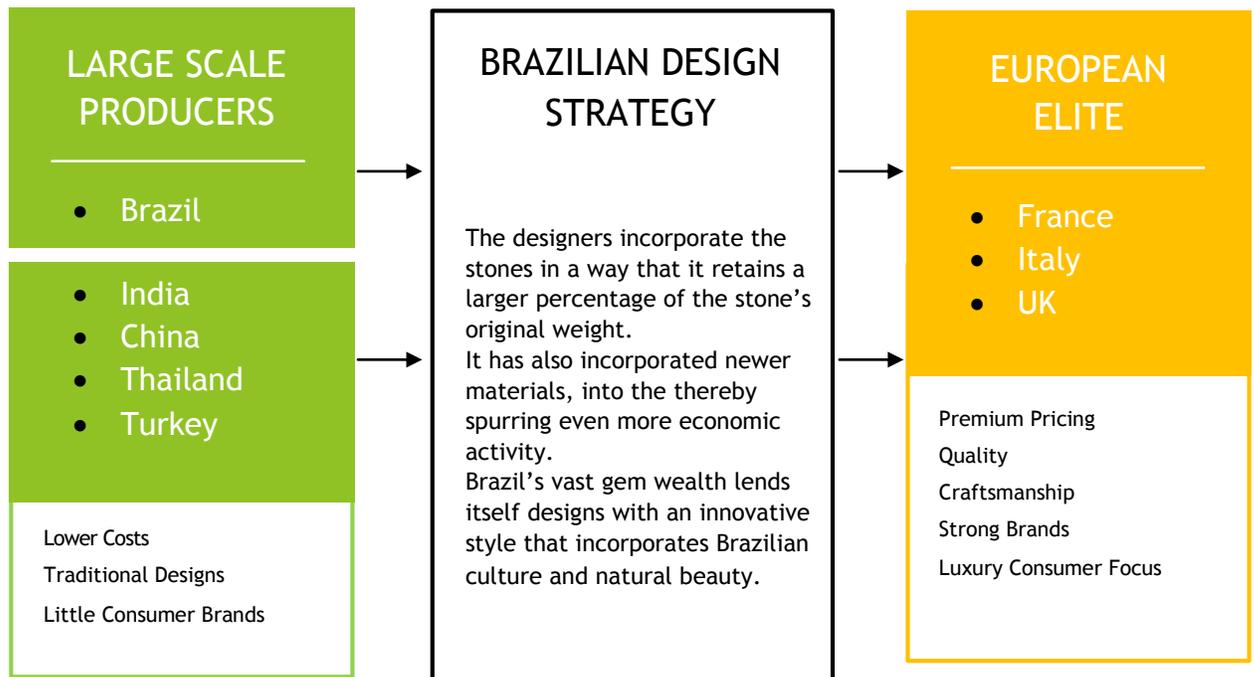
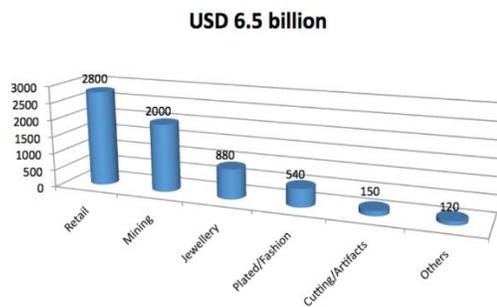


Figure 9-3: Brazilian design strategy

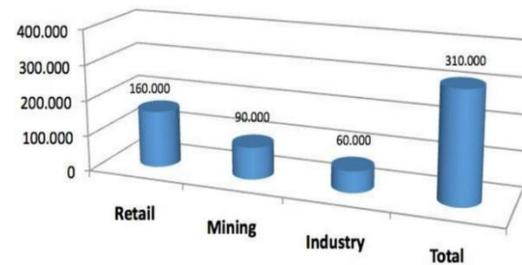
The analysis of Brazil's jewellery market presents a good case as to how it has channelized the resources of the natural resources of nation into an entire industry benefiting a greater number of people and establishing a brand for the country itself.

Brazil's success with the design, manufacture and supply of 'executive aircraft' to developed countries is yet another case of the success of design-driven industry. Brazil concentrated on the market gap for aircraft which was not economical for the developed countries to fill up. Innovative product development is now recognised as a multi-disciplinary activity involving product planning, engineering design and industrial design supported by marketing and management inputs. Their ability in focusing on specific sectors for targeted results has also paid back well. With the escalating problem of global warming and the adverse effects of human activities on nature, there has been a focus on developing

environmentally friendly solutions to answer the needs of the nation. The designers in the nation improvised on the conventional processes to achieve which was very specific. The nation hence enjoys, several advantages who continue to employ conventional processes and techniques which still affect the environment in an adverse manner and are increasingly prohibited. Their vision in trying to implement policies and measures keeping the future in sight may lend them an advantage in the global market. (International Colored Gemstone Association 2011)



REVENUE GENERATED



EMPLOYEMENT GENERATED

9.3.3 Finland

The history of design in Finland started in 1875, when Finland was still under Russian regime. Efforts to start a “systematic action to promote industrial crafts and arts” resulted in the foundation of the Finnish Society of Crafts and Design, responsible for encouraging manual skills within industry. The School of Arts and Crafts remained strong and became an important educational institute, responsible for training many important Finnish designers. In 1973 the School became the University of Art and Design Helsinki, which is currently one of the best Universities for design in the World.



Scissors by Finnish designer Olof Bäckström in 1961 became the standard design for scissors world-over and established Fiskars as a recognized global brand.

Finland became independent in 1917 and this started a process of internal construction, bringing an emphasis and identity to architecture and interior design. The



The Aalto chair - a sleek modern chair which was later adopted and popularized by IKEA was designed by Finnish architect Alvar Aalto.

“Finnish style” started with strong influences from Russia and Sweden. In the 1930s, Finnish designer and architect Alvar Aalto started breaking into the international market building a positive reputation for Finnish design. This was a prosperous period for the Finnish economy, which was supported on the strong fundamentals of its educational systems and celebration of its culture.

In the 1970s the use of new materials combined with new manufacturing technologies and gave designers the opportunity to exploit new forms and colours in mass production. Ergonomics and the environment became relevant issues in the 80s. At this time, industrial design was starting to receive better recognition in Finland with more

industries and more sectors employing professional designers in more significant roles within product development and corporate strategy teams.

The country’s economic situation collapsed in the 1990s with a severe recession characterized by a major banking crisis, rising unemployment rates, accumulation of government debts and inflation among other factors. Moreover, the collapse of the Soviet Union had a strong negative impact on the Finnish industry. The end of the convenient Finnish-Russian bilateral trade left companies in Finland with a negative balance on their foreign trade as well as an old-fashioned industry with out-of-date technologies. The country then started a movement that brought Finland to the lead of the list of competitive countries by implementing measures with long-term impact instead of immediate solutions, as usually chosen by governments at critical moments. One of the most crucial measures was the ambitious aim of building a knowledge-based country and a national design policy which would be central to the scheme. The measures proposed entailed three main goals: to improve design quality; to promote extensive use of opportunities inherent in design with a view to improve competitiveness and employment; and to develop the quality of the living environment and promote a distinctive national culture. The measures succeeded in

achieving the intending target, with Finland becoming a competitive knowledge based economy with the highest investment rate in R&D in Europe and specialized high-tech industry. Their domestic success was also acknowledged by the world as important global brands established in Finland like. Nokia, Suunto, Metsopaper, Ponsse and Polar achieved success on the international stage.

Finland which was a country in economic crises and had to create an assertive plan to recover. Design was part of this plan. The result was a staggering growth rate that raised Finland to second position among the most competitive economies in the World. The stable situation and political continuity, government support and investments, quality education, tradition and reputation in design, stimulus to R&D were all factors that have contributed positively to the success of the implementation of design strategies in Finland. (Raulik 2008)

9.3.4 Europe & USA

Similar processes can be observed a few years ago in the presently developed market, which were beginning their economic expansion then. After the invention of the automobile, it was experimented and made more efficient in Europe. The advanced mechanical knowledge and know-how enabled them to produce better and more powerful cars. Once the car was introduced in the American market innovators worked to further enhance its efficiency. But, certain individuals sought to take a different route who merged business with design, and aimed to make the automobile available to a greater audience, and incorporated innovations in the design of the car to enable it to be mass-produced. The European markets still continue to remain as a market for high quality, high performance automobiles. Hence, we can see the different approaches taken in 2 different countries, for different end results.

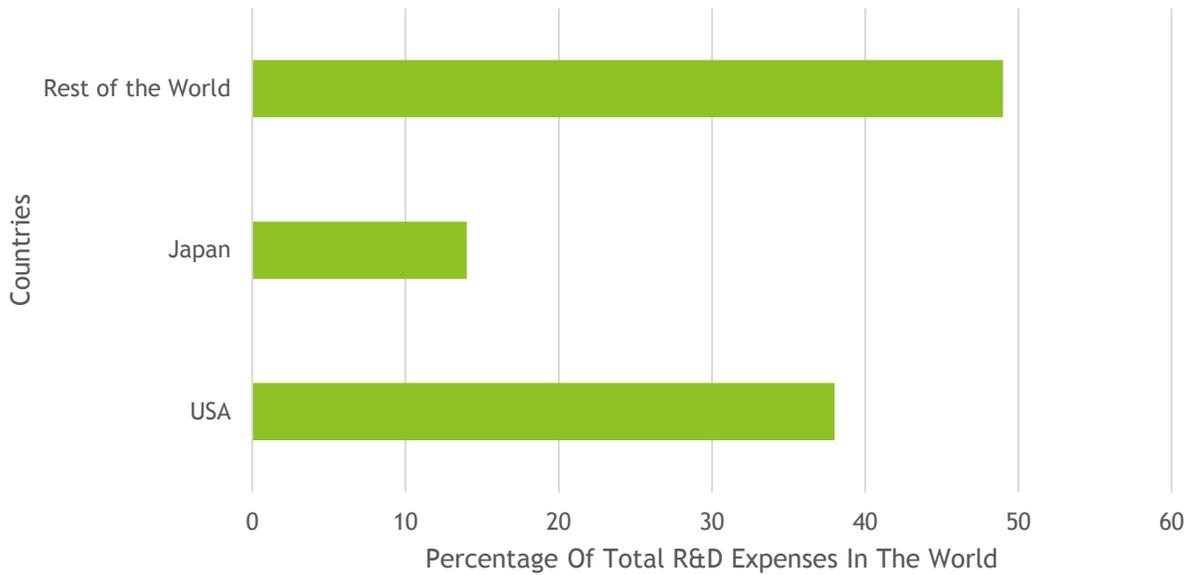


Figure 9-4: Design sector promotion leaders

Acceptance of product innovation within the industries and of new product ideas by the society would not have been possible without active promotional efforts. These massive efforts succeeded only because, the government's came forward with liberal funding to form design promotion organisations. Similarly drastic changes in the traditional design approach found its acceptance by the design community only through systematic efforts in updating design education. These promotional organisations undertook programs such as organising exhibitions, seminars and courses to create awareness of product design. Schemes of certification of product quality and institution of awards for good design were other important activities. Recognizing the increasing technical and technological complexities of modern products, these bodies were forced to look into development of design engineering capabilities. Recommendations such as changing the bias of engineering education towards product innovation and introduction of design subjects in secondary school curriculum show recognition of interdisciplinary character of modern design activity.

Another important study of the international design processes has been the process of combining business and design. This was an effective way of ensuring design innovation gets its due importance and at the same time benefiting maximum possible populations. The world wars saw a lot of money being funded into design innovations, for war-purposes, which did very little to improve the quality of life for the people. With post-war peace time a greater focus was placed to improve the quality of life. However, it deserves a mention that

the government funded design activities during the world wars proved the foundation for the post-war progress. (icongrada IDA 2011)

“Good design can help us meet our commitment to improve the efficiency of government...and reaffirm our concern for the human side of government.”

- President Jimmy Carter

9.4 HISTORY OF DESIGN IN INDIA

The crafts of India are diverse, rich in history and religion. The aesthetics of each state in India reflect the influence of different empires. Throughout centuries, crafts have been embedded as a culture and tradition within rural communities. They are a constant source of inspiration for contemporary designers and the subject for global exhibitions representing India.

In ancient India people lived in colonies called and they were used to make utility items for their daily need. This was the birth of design ideologies, which we may recognize as Indian. These crafts diversified into local styles, and refined in the different local styles. One thing that continued in all forms of the craft was the exhibition of the skill of the Indian craftsman and carried forward the local Indian flavour .At earlier stage, Indian-handicrafts had been used as utility items to fulfil their need but now these products have become the creation of art and are used for decorations, as they have lost utility in face of modern technological products.

Historically, India has been at the fore-front of crafts and innovation, and is one of the few cultures on the planet that has managed to sustain for thousands of years. From the time of the Vedas, there has been a conscious attempt to channelize the forces, to establish a better living for the masses. Another brilliant achievement has been that this knowledge was spread to the masses in the form of religion - a language which they understood very well. Particular attention to the minutest of detail was accorded, and its observation, actions and implication were studied and coded in an organised manner.

At a later stage in India's story, the development came via the channel of connoisseurs of crafts, and came about in several short spurts. This part was less focused on its impact on the populations, but more on establishing an identity of itself. However, this period stands as a proof of the innate skill and ability of the Indian designer, which has proven its mettle time and again throughout history.

The Indian design field received a major set-back due to colonization of the land by foreigners, but it is still commendable to observe that it has lived past the foreign influence and brutality. For their own benefits, the British constructively decimated the local Indian crafts system, in order to ensure the success of their machine based industrial society. The transition from craft to modern industries was never really complete. Hence, we reached a

point where we had a vast historical background, but also a good foot forward to harmoniously step into the rapidly progressing world.

Although India has harmoniously entered the field of a globalized business, it is also arguable that it has been come at a steep price. A fast and quick way to get a quality assured product or service has been to import the basic idea, and sell it to the population. The agents in foreign lands who export their designs to the Indian market, do so with severe restrictions and stifle the scope for design development. Coupled with the low interest of the government and general public, it can prove to tightening noose around the neck of the Indian design sector, whose identity appears to be eroding year by year.

There have been several commendable achievements in the design field in India, yet they have come far and wide. A greater cause of concern is the falling interest in this sector of the youth of the nation. With local opportunities stifled, interested persons have been denied the chance to contribute to this field. Another concern is the disconnected growth of the education sector from the industry. Disparity exists between the Indian based educational institutes and the industry where most of the ideas are imported and only replication process happens at a local level.

9.5 CURRENT SITUATION

The Korean Institute of Design Promotion (KIDP) developed the first ever framework to evaluate the design competitiveness. The National Design Competitiveness Power (NDCP) 2008 revealed its first results for seventeen major countries. The report found that Italy topped the list while France and United States were ranked second and third. China, Singapore and India were ranked 13th, 15th and 17th respectively.

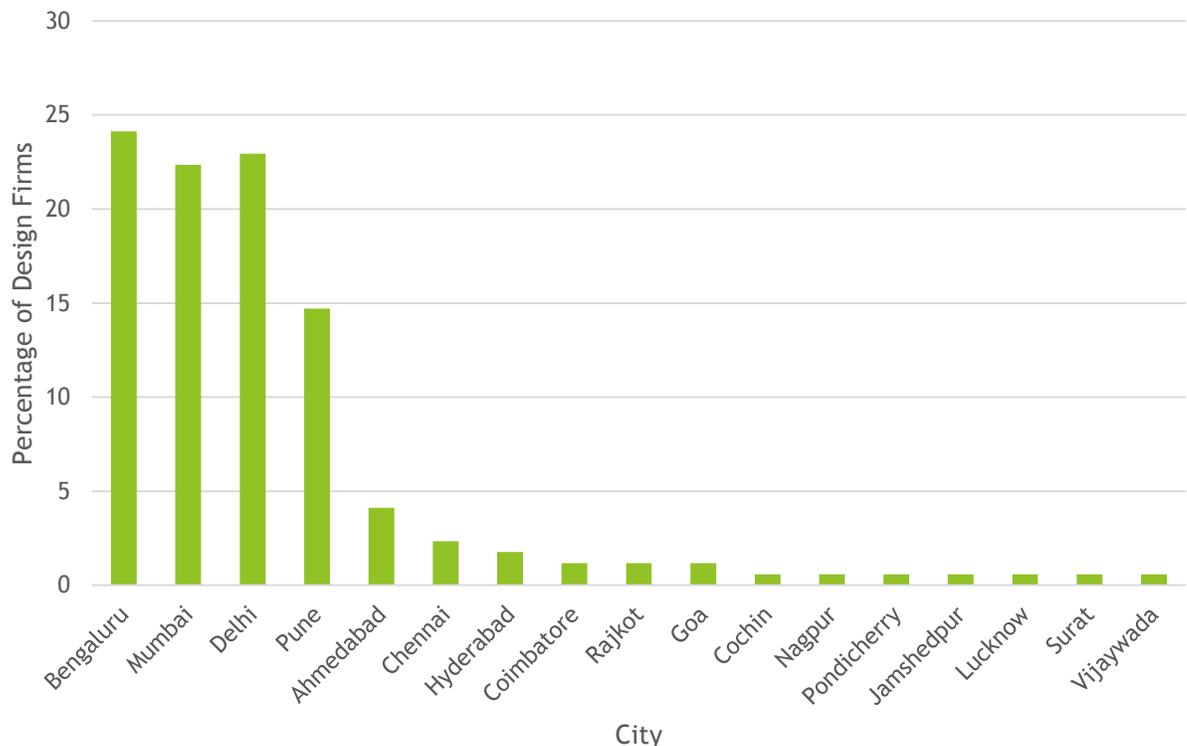


Table.3: City-wise distribution of design companies

The major concentration of design companies is in four urban areas viz. Mumbai, Delhi, Bangalore and Pune. All these four cities are industrially active and are home to the majority of well-known Indian companies. Bangalore and Pune offer a very good standard of living, good weather and an experimental, culturally active society. Also technology companies and older automobile firms have established offices here. Mumbai and Delhi are natural destinations for design companies purely for the reason that these two cities host the topmost Indian corporations from diverse segments. These two cities offer a well-developed market for design services.

With India transitioning from a newly freed colony, through a phase of incubation and stepping onto the global platform as a contender for a regional superpower, the way the

country functions is keenly watched by international experts. Running a nation being pulled at ends by the democratic nature of the people, the socialists, the capitalists, the common Indian and individual forces that command populations, the nation seems to grow in a different direction every-day. The business class of the country has been a strong force in the country's activities. However, it is this very class, vibrant and dynamic, which has been absolutely ignorant to the design sector, despite that the fact that almost all sections of the populations have been influenced by it. India has its own way of doing business, where regulations, policies, competitions only form a part of the picture. It is based strongly on capturing the current market. Quick decisions, high risk ventures and fast-adaptability has been the way of doing things. This business style, colloquially called as 'Jugaad' business, has been the way of everyday life for most Indians. However, one of the pitfalls of this has been that progress has taken place in short spurts, and rejection of certain aspects, even before their implications could be considered. The businesses have been dependent on marketing, which is has a shorter payback period, and consequently ignored design, where the pay-out happens over a longer period of time. The spurt in activities has boosted certain design fields, but it will an overstatement to say that the progress has been all-around. On the whole this business atmosphere has been detrimental to the efforts of the design professionals, to make a conscious and controlled growth.

The failure of core design processes not picking up in the market is mainly lack of its acknowledgement. In an ideal scenario the country would be guided by the 'thinking heads' who would be directing a population of almost one billion by whose labour and effort the rest of country moves forward. However, the truth is that these professionals are deterred by an ignorant and unfavourable market. One of the main reasons for the lack in demand of their services is the failure of the small and medium enterprises to absorb the design professionals into their business cycles. There tends to be a lack of belief in the value of, or confidence in the outcome of, hiring creative professionals. Businesses tend to foster efficiency, cost-cutting, incremental changes and a focus on day-to-day business. Innovation is not likely to flourish in such a culture and hence their need was never apprehended. There may also be a lack of knowledge about where to find and how to manage design services or assistance in this matter. In general, the businesses are not managed through an elaborate structure. Typically, they are managed in a personalized way that directly reflects the knowledge, skills and attitudes of their owners or managers. This characteristic is of vital relevance if this individual lacks awareness of the potential value of design for the business,

or has neither the time nor the skills to utilize design adequately, then the integration of design practices in that company will be difficult. They lack information about issues such as potential markets, sources of finance, government regulations and grants. These businesses are less able than larger companies to absorb the risk and uncertainty that is an inevitable component of important activities such as process innovation and new product development, and often close down the doors to design developments, for survival.

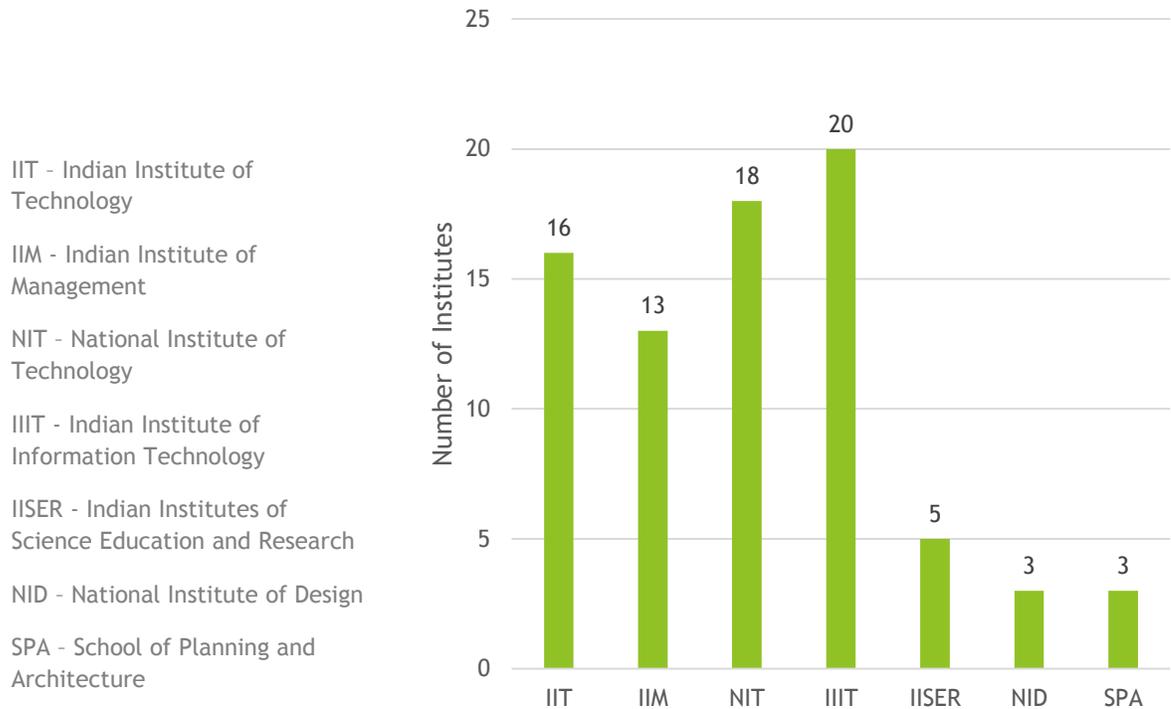


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..4: Comparison of Government Established Institutes

It is peculiar that for such a huge population, a large part of the population has been largely been ignorant of the benefits of design, and hence the country as a whole suffered its disadvantages. In spite of a fairly good growth rate, engineering product industry has relied heavily on foreign technical know-how and design. Import of technical know-how is imperative to catch up with the latest advancements in science and technology but this technological transfer has led to design transfer as well resulting in its failure to develop indigenous design & development capabilities. The Indian market continues to remain flooded with foreign products that in many cases meet consumer aspirations but not their needs. This 'design dependency' has made our products less competitive in the world market and has adversely influenced the export performance. Another point of observation has been

the dying Indian crafts. It is surprising, and pitiful that a nation with such skill and heritage is ignoring cultural wealth, in choosing to ape an imported style. With rising economic and political issues in India, the craft sector is struggling to uphold. Although an interest to retain the culture of crafts is seen in designers and institutions.

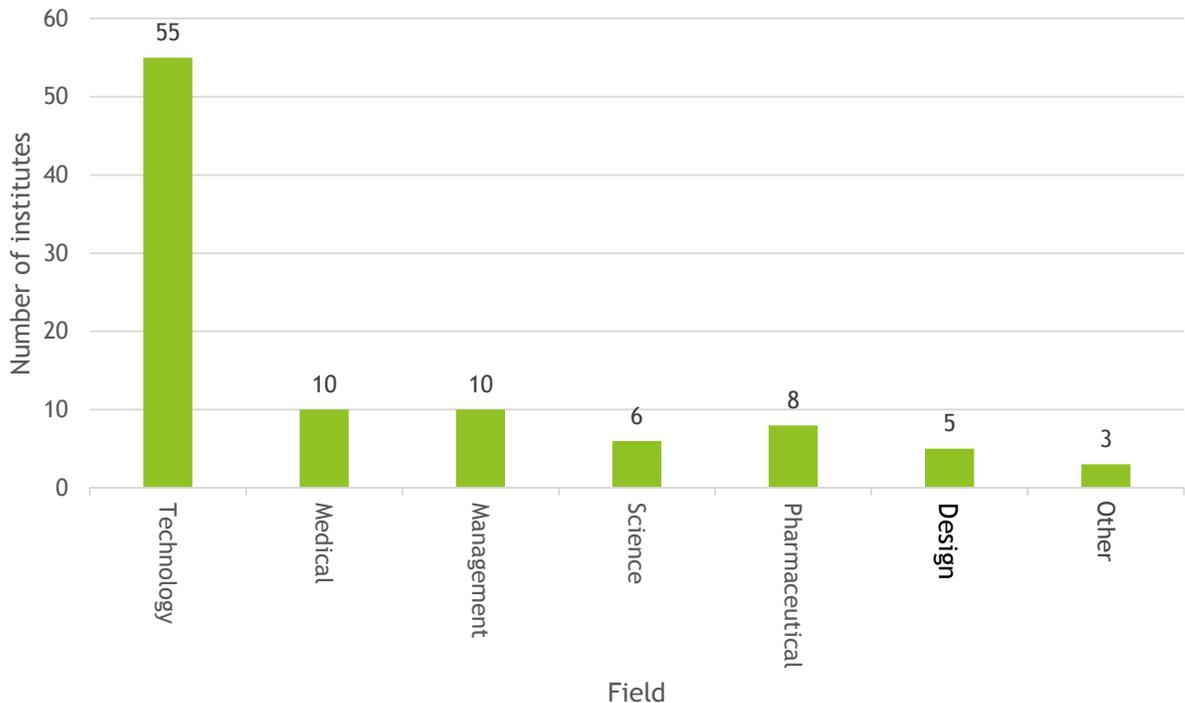


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..5: Institutes of National Importance in India

India is said to be living in two existences - the urban area rich, content and living in its own bubble on side and the rural areas on the other which haven't been so fortunate. This contrast is also visible in the design sector. Design is an alien practice in some parts of India, unless one can make them understand in their own language, that it is something we do on a daily basis. With the burden on the burgeoning cities, developers and authorities are trying to establish newer centres of growth. However, some of these centres are having an even greater difficulty in seeking professional design inputs for their needs despite the fact that the urban areas themselves have more than the required supply of designers. It may be said that it is these areas which are going to shape the future of this country, but very unfortunate to learn that about their helplessness.

Some of the problems listed like loss of identity, haphazard development, inefficient systems, shortage of designers are not even design problems, but rather a problem with the people's mind-set and results stemming from the defiance of design considerations. Most of the problems reaching the designers are met with some solution even if it is not in its fullest form. But most of the issues never reach the professionals whose job is to deal with them, and it is going to be very difficult for them to help the cause, if the general public do not hold their opinion of value. The government over a period of time has realized this problem and sought 2 main goals to resolve the problem. Firstly, by improving education in design and secondly, by spreading awareness about design amongst the people. Most of it has been some kind of direct response from the government, although some of it haven't met with success in tackling the issues.

STRENGTH	WEAKNESS	OPPORTUNITY	THREAT
<i>Vast cultural resource</i>	<i>Lack of general awareness</i>	<i>A booming economy</i>	<i>International competition</i>
<i>Well-acknowledged achievements</i>	<i>Lack of recognition</i>	<i>Recent government initiatives</i>	<i>Government ignorance</i>
<i>Established centres of excellence</i>	<i>Poor educational setup</i>	<i>Establishment of design hubs</i>	<i>Policy paralysis</i>
<i>Vast human resource</i>	<i>Lack of belief in design as a core discipline</i>	<i>Interest of foreign companies</i>	<i>Foreign influence on local market</i>
	<i>Lack of government initiative</i>	<i>Rising awareness</i>	<i>Westernization</i>
	<i>Urban-rural disparity</i>	<i>An active private sector</i>	
		<i>Globalization</i>	
		<i>An up and coming design culture</i>	

Table Error! Use the Home tab to apply 0 to the text that you want to appear here..6: SWOT analysis of the Indian design industry

The Government of India has sought recommendations for a program of training in design that would serve as an aid to the small industries; and that would resist the present rapid deterioration in design and quality of consumer goods. It has taken initiatives in the sector, but the measures have come as a few thrusts far and wide. A state of fragmented

decision-making and policy-implementations, has only been worsened by inefficient executions and delays.

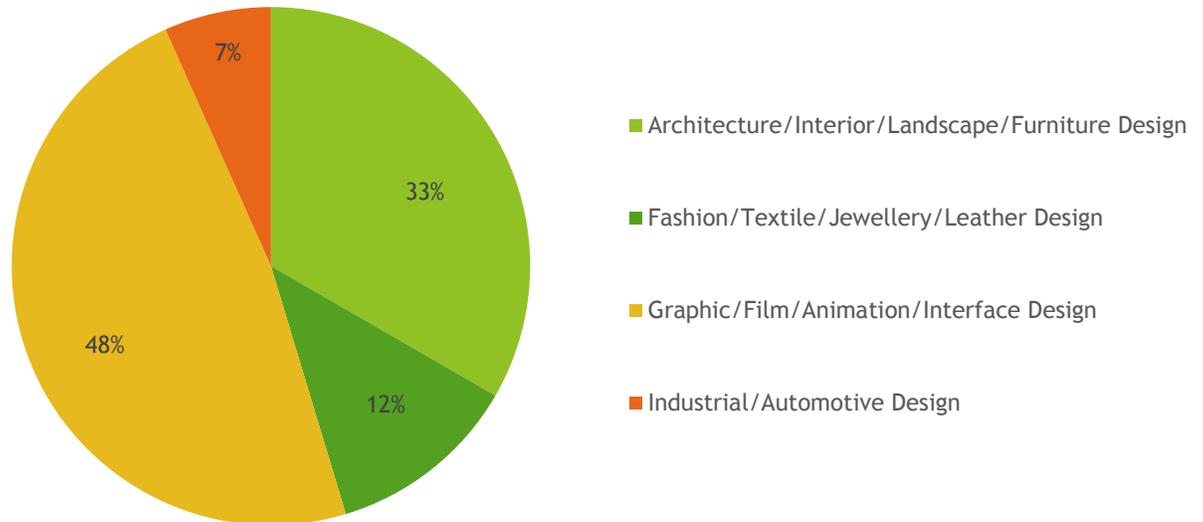


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..7: Design industry distribution

The National Institute of Design was set up in 1961 based on a report by Charles and Ray Eames called the India Report of 1958. In the past 50 years the Institute has had a remarkable journey of exploration and discovery that was informed by the spirit of the India report but the Government that had set it up with a great deal of vision and enthusiasm in 1961 seemed to have been all but forgotten over the next 50 years with the Institute being managed by a small department within the Ministry of Industry while the other major national institutes such as the Indian Institutes of Technology and the Indian Institutes of Management were placed under the Ministry of Education which is now the Ministry of Human Resources and they were accorded a status of importance that NID was never given for over 50 years of its existence. NID's educational experiments were undermined by the search for formal recognition from the educational systems that dominate India.

NID is indeed deep in its contributions and very little is known of its contributions to society as well as to design education in the world since so little research has been conducted about this work and its significance unlike the volumes that have been done on schools such as the Bauhaus and HfG Ulm in Germany.

However, the situation has changed with NID being awarded a status of an Institution of National Importance on 10th January, 2013, which puts it in the same league as IITs and IIMs.

NID has waited for over 50 years to get some kind of real recognition from the Government of India. IIT's on the other hand have enjoyed the privilege of being labelled an Institute of National Importance from the very beginning and now even Regional Colleges of Engineering have been redesigned as Institutes of National Importance and this places technology at a real advantage over all our design schools and this must change if India is to move forward with innovation and design as drivers in the future. Another matter of concern is the urban-rural divide in India. All government policies carry the promise that it will help solve the education asymmetry that exists in our country today with the urban areas having advantages over the rural areas and from the advanced West to the impoverished and deprived South. There are a few well-established centres of good design education and activities, but good education uniformly is also an issue that will need planning and strategy of another order of magnitude.

There are other government setup institutions like National Institution of Fashion Technology and Indian Institution of Technology, which also are active members in the design field, running high quality professional courses.

NID is indeed in rare company with this accord and if you look at the other educational institutes in the country you will find that colleges run into thousands and universities in the hundreds perhaps without counting the huge number of management schools and schools of technical and medical education. Design is seeing a new beginning and an increased quota of financial allocation with this recognition and that other design schools too will get the privileges and attention from government that the regional engineering schools have got in recent years. So far there are only 3 NIDs running courses for a small number of students for a population of more than a billion. It may not just be difficult but impossible for a few select government to supply all the needs of the market. There have been attempts by private institutions to make inroads into this sector, but their efforts have remained lack-lustre due to their low standards and stifled funding. Recently sizeable investments have started flowing into these initiatives in India, but a minor fraction compared to the massive investments in science and technology. Such investments have only driven a wedge into the urban-rural gap in the field of design education. Poor schools and distant colleges are still

the same. Design education cannot go this way and is getting risky, since the Government does not have the money now that it is already in deep deficit and there has to be a strategy to substitute that lack of funds. A ray of hope exists in the form of private sector investments for real design education, not just at the leading edge but also at the "thick end of the wedge".

9.6 NEED FOR REJUVENATING THE DESIGN SECTOR IN INDIA, AND ITS OBJECTIVES

India has made rapid strides in many fields. The industrial climate particularly in the last few years has changed dramatically. The increased abilities of the private sector in India to attract capital, shows the kind of confidence that people are willing to place in the new industries. Internationally, India is one of the economies, projected to be a leader in the coming years, and every step is assessed in apprehension of our progress. One of the reasons for our surging economy has been the private participants. The development of a nation lies in the development of its small and medium businesses which directly affect the citizens. This sector however, has completely ignored the involvement of any design professional. It is not any particular bias against them, but rather the ignorance which has led to this fate. There are innumerable statements that assert the value of design. First of all, it is important to acknowledge the importance of design in businesses as a structured creative process that provides a competitive tool for firms in all sectors. Design is also fundamental in realizing innovation, which gives companies vital differentiation in the market place. Design is also a fundamental determinant of the quality of human life, as it affects everyone in their everyday routine. On a larger scale, design can potentially contribute to solutions to societal and economic problems and can be seen as a force for transforming everything, which can address people's needs. Hence, it seems it can hold a key mechanism for a developing economy to aid itself in the process.

A nation establishes its identity, through its culture. This is reflected in almost all the activities taking place in the country. From a global point of view, the culture and geography of a place is the only thing that is unique to that place. Design is a field that also ensures, that the culture is represented appropriately. However, for a nation where the design experts have little voice in policy making and low acceptance, the whole nation stands to lose and will adversely affect the identity of a nation over a longer period. It can dilute the identity of nation in several small unseen, uncontrollable steps, which are difficult to regulate. These impacts, once established are also difficult to undo, and the effects are almost permanent. Later changes and iterations only create an atmosphere of confusion.

Looking at the disadvantages and the seriousness of the basic problems involved, The phenomenon called 'Westernization' has impacted our Nation, which has been aggravated to a greater extent due to the weak influence of local design principles. Initially, perceived as

progress, but now recognized as aimless progress, has had an adverse impact of loss of character. Also, since the designs were prepared keeping in mind different requirements, it is not perfectly tailored for the local needs and often have negative fall-outs. Continuous transfer of 'Western' design has brought into the country Western habits and value systems, creating a crisis in our cultural identity. It is essential that without delay there be a sober investigation into those values and those qualities that Indians hold important to a good life, that there be a close scrutiny of those elements that go to make up a "Standard of Living", which can suit the Indian standard. (Confederation of Indian Industry n.d.)

"If imitating the West, India (with its vast population) tried to reach the living standard of England the resources of the earth will not be enough." - M.K.Gandhi

The case assumes an even greater level of importance and emergency, in a rapidly developing economy. Rapid economic growth has become a necessary to justify and prove the potential of any nation on the international platform. This process of rapid economic growth is indeed rapid, and all measures are taken by the policy-makers or the benefactors to ensure that it doesn't lag behind due to any reason. In such a scenario, if the design community doesn't keep pace, it will be vulnerable to a fate that any industry in a globalized economy would be susceptible to - being outsourced. The progressing industry, would satisfy its need of design inputs, by employing the services from another country, but its effect on the local environment of the nation would be very harmful and the design sector of the nation would be decimated slowly but progressively.

If India can learn from the other international examples, it is a common fact that great industrial production and increased economic activities, are often precluded by government initiatives to stimulate and organise the design sector. It also does the dual function of maintaining the integrity of the nation, and as a whole streamlining the forces in the country which makes more efficient the process of economic development. India has proven its global competitiveness in the last decades, maintaining steady growth. It would be an ideal time to stimulate the local craft skill and tap the national human resources to ensure we maintain to drive the national growth and it proves to be a meaningful growth for all Indians. The government can actively be involved in this process, or may be a passive member, by formulating appropriate policies and overlook the developments in the sectors by private participants.

The government must revamp the governance structure of its design schools, and make it responsive to inputs from experienced designers and alumni from across numerous sectors of our economy. It should also ensure substantial increase in funding and autonomy in operation and leave the action in the hands of able design leadership with vision and ability. The government should take measure to ensure that people interested in the field of design, have an opportunity to gain quality education, and establish a career in this field. It is also important to ensure that design knowledge penetrates through the masses, and it gains credibility as a field of professional expertise. We need a serious overhaul of all design curricula across disciplines since we are at the cusp of great change and design deals with the shaping of this leading edge itself. We will need a special set of parameters to evaluate effectiveness and relevance. (IDC, IIT Bombay 1989 (updated 2009))

Instead of focusing on centres of excellency in design, which is unlikely to have a major impact on the overall mind-set of the nation, it would be more appropriate to envisage uniform progress throughout the fabric of the nation. The cultural diversity in India itself is so vast that it might be difficult to find a common solutions to the problem, which the people would willingly accept everywhere. Hence it is essential to generate awareness and knowledge amongst the general populations, giving them a chance to understand the process and then it may reassess its goal, once we have a set of population which can understand the problem. Indigenous professional expertise in design will fail to attract any interest if its roles and contributions are not understood properly by the society. Hence, it is essential to create design awareness and promote design culture in the economy, for a harmonious inclusion of this class into the social fabric. It is also important to create design awareness in the society that will ultimately use the new designs. Both these can only happen with policies at national level which gives this sector its due importance.

On observing the development of other sectors in the Indian context, one can see that quality progress in the sectors have been due to the actions of the government, but the penetration of the education for the larger audience has been taken forward by the private sector. Hence, it is importance to ensure measures taken to give proper incentives to the private sector to popularize this sector among the masses. India is a land, where the private sector is very competitive and have resolved several national issues, despite having its share of criticisms. With the aim of increasing the general awareness through the populations, it may seem a daunting task for a single authority to execute it. As one of India's most prominent designers Ar. Charles Correa, has said in one of his statements, "**India is too vast a nation to**

be captured by an individual entity", the program has to include more local decentralized player for the development, but be regulated strictly to keep the standards high.

There is also the issue of a fragmented sector, as we do not have any official class we can label as the Design Community of the nation. Novel developments and ideas, may flourish at a local level, but is restrained in its growth and acceptability, on account of a lack for an environment to nurture its growth. The schools suffer a greater loss, as upgradation of the focus, course outline, methods, resources and assessment methods and criteria and other important decisions and activities are ignored as professionals find it waste of time to participate or conduct courses for all equally. Design must not remain restricted to the pandering to the needs of large corporate industry and their short term needs for car styling and graphics when the country needs serious design investments in urban mobility and public transportation, just to give one example where we need to shift our emphasis in real earnest. We need to invest in design faculty and the young designers coming out of our schools so that they may serve the real clients, the people of India.

10 DESIGN SECTOR IN INDIA

10.1 THE HABITAT FOR A THRIVING DESIGN SECTOR

Analysing the outputs of design industries in other countries, it is easy to decide the need for the sector in a developing economy. But in order to achieve the output, we need to analyse what inputs have to be made. Like a garden, the industry must be nurtured and cared for, otherwise there is a risk of it growing wild or even worse withering away. Like most other industries, the design industry stands on 3 main legs - proper government support, availability of trained professionals and a healthy market to keep the design companies' business running.

Like any other sector the government's decisions and initiative can harbour or kill the growth of the design sector. Seeing the benefits of design for the economy, it is an important part of most governments to include measures to promote the growth of the design industry. Establishment of institutes and organizations to promote design activities, establishment of government supported college, developing schemes for proper planned growth of the sector, creating appropriate business incentives for the private sector to take the growth forward etc. are some of the measure the government can use to fuel the design industry.

The design industry requires trained professionals to carry out its activities. Design itself is a process which is managed and can be done only by man. Other tools and equipment may aid his process, but cannot completely eliminate the need of human intervention. In fact, very little of the design process can be done without human



Table Error! Use the Home tab to apply 0 to the text that you want to appear here..8: Stages of growth of design industry in a country.

involvement. The understanding and skill required for the process is also high, hence it is necessary for the professionals to have proper training. The capacity of the industry itself is very limited to keep creating a constant supply of man-power for its needs. Only big industrial houses and conglomerates can afford this. The major chunk of the industry with its smaller participants largely depend on the talent-pool of the nation to supply the industry with its designers. Educational institutes of good quality can help supply this to the market. The institutes can help the industry overall by assisting the government in its policies, promoting its causes, participating in research and innovation and ensuring there is a constant supply of trained professionals to the industry. A check of the educational institutes can be the litmus for checking the state of the sector in a nation.

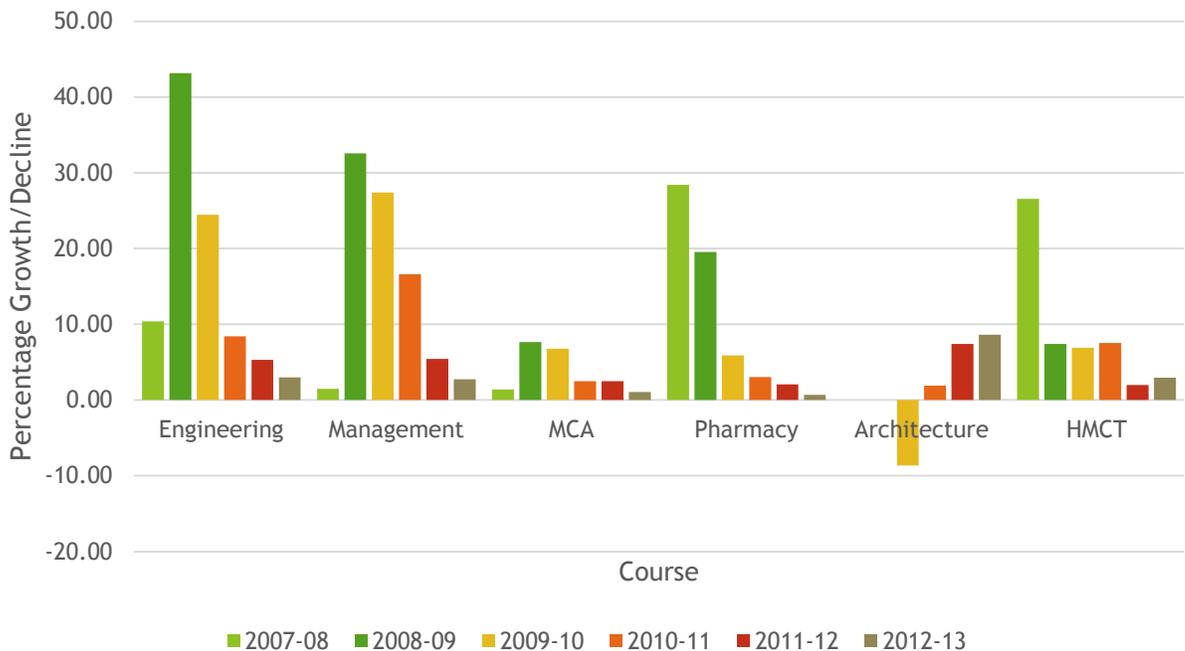


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..9: Growth of Different Programs in Technical Education

Design like any other sector can form a part of any economy only if it supported by other segments in the economy. In the modern day world, design must be justified in the balance sheets of the companies if it has to survive. Entrepreneurs and designers are only likely to invest in design studios and institutions if they feel they can earn returns on their investments. Companies will seek to have their service more optimised and tailed to the market demands if they compete with their competitors in a fair environment. It may lend the companies an advantage in the market if they harness the benefits of design

appropriately. The environment for good design projects in a rising economy is better as the competitors stand to gain more if they achieve any advantage over their rivals. Companies are more likely to invest in research and development for product or service enhancements. There also has a large enough market to ensure there is sufficient projects for all designers, but at the same time if there is a slightly less number of projects than the optimum capacity, it likely to keep the quality of the design high. The administration also has to ensure all companies are subject to fair competition. Some support for companies starting up will ensure there is constant innovation and no stagnation.

The observation of developed nations with a good design sector shows that, private institutions and companies can take the growth of the design industry itself by a great deal. India at present shows a bright potential for the growth of design. India has a highly competitive private sector with good backing. The government has woken from a slumber in its initiative to boost the design sector and recent changes like the National Design Policy and recognition of NID as an institute of national significance, affirms it for the market. In the matter of design education however it is slightly behind, with the industry complaining about the lack of supply of quality designers.

10.2 SCOPE FOR DESIGNERS IN INDIA

Although, lagging far behind in the design sector internationally, India has managed time and again to prove that the country holds good potential for a thriving design academia. The NIDs established with great expectations have done a commendable job in the field, which has been acknowledged internationally, but has under-performed largely due to the government's disinterest in its activities. This may however change, with recent actions which may give the NIDs their long due credit. Historically, the educational institutes operated by the government in India, have been successful with the case of the IITs and IIMs establishing themselves as centres of excellency.

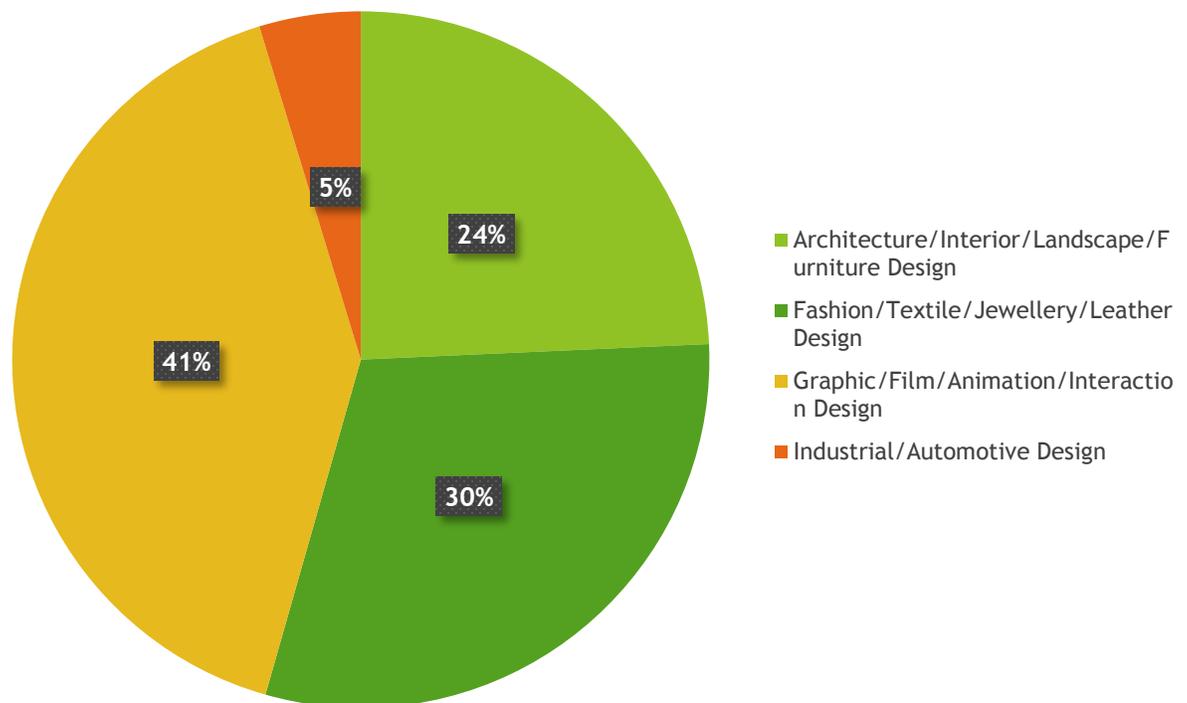


Table Error! Use the Home tab to apply 0 to the text that you want to appear here.. 10: Enrollment of design students by sectors

It has been a case of divided attention, with the IITs and IIMs being the focus of government's attention. However, with the recent importance granted to the NIDs by the government, it may prove as a stimulus to the sector. This may not be an isolated case. Even in the past, the private development of the technical and management sectors have been fuelled after government's initial spark by establishing institutes for the purpose, and has been the guiding the path. The demand for technical and management has ensured that the

educational sectors have been able to sustain themselves, and one may predict a similar scene for the design sector once it opens up. Many foreign design companies are setting up offices in India on their own. There are a few already here, mainly in the area of branding and communication. (Confederation of Indian Industry n.d.)

Private institutes and colleges have made forays into formal education into the design sector. Foreign universities have been very keen to set-up institutes for imparting design knowledge in India, and most of the large-scale private institutes for designs are the ones which have been set-up by these universities. The Indian government is however apprehensive about the opening up the education sector in India, to foreign universities. Traditional Indian business houses have been the second drivers of growth for the design education. It has been very essential for the private sector to establish a working business model to run an educational institute successfully. The Indian government has however done very little to ensure the quality of education in these institutes are maintained, and it has been a matter of concern.

The growth of private design institutes in India has been concentrated in the urban areas or zones of specialized economic activity. An observation of the location of these institutes, will show that the functioning of these institutes have been around places, where there has been a bustling economic activity or an incentive for it. Hence, apart from the established government initiatives, the scope for establishing an institute teaching design is very restricted geographically. Although, in such an economy it is essential for more institutes to develop simultaneously throughout the country, it is far too risky for the private sector to take up the initiative on its own and an unlikely development in the current scenario. The government must take some action to establish a conducive atmosphere for the growth of private education throughout the country and not just the areas of economic activity. A look at the growth of the commercial design sector also closely resembles the needs and requirements of design institutes geographically. (Deloitte 2012)

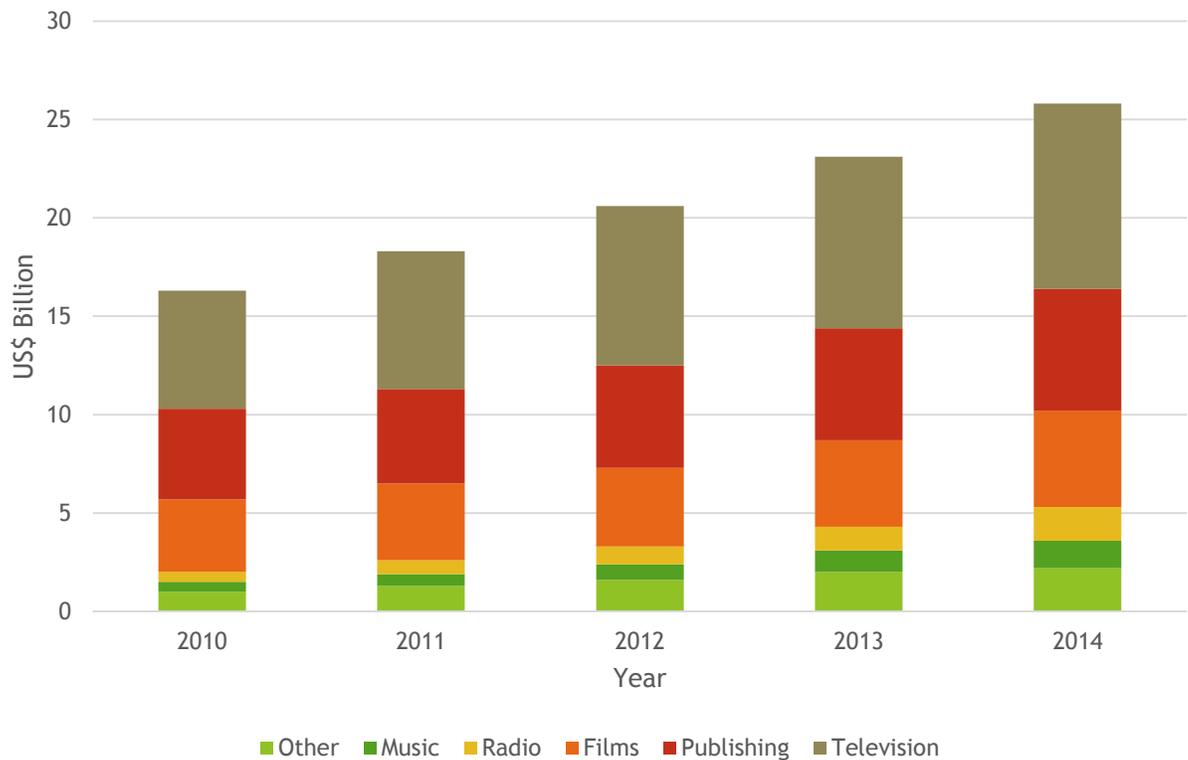


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..11: Projected Growth of Media Industry in India

The commercial growth is also sector specific and different markets have emerged for the different practices within the design fraternity. Graphic Design has undergone a sea of changes in the recent past and has moved from a print-based practice to a digital process. The atmosphere for the development of this sector has been most conducive in India because of the low infrastructural set-up needed and low components of physical factors influencing it in the steady computerization of the process. It has been a service frequently required by the consumer business sector and hence has found a growing demand. This creative sector has mostly grown due to the domestic demand, and the nature of its activity is such that it has been highly local, so that the designer may properly understand the client requirements and also the background of the expected audience. In the very recent past, it has spurt offshoots in practices such as Interaction Design, and User Experience Design with the growing use of a web/mobile/computer based set-up for the working of businesses. The development of these new sectors has been in close co-ordination with technical schools and institutes, due to the need of technical knowledge for its execution. Film and Animation has grown in India, primarily driven by imported projects.

Fashion Design has had a long history in India and encompasses a wide variety of different styles and audiences. Most of the commercial design development projects have been around the commercial sectors of India, which is influenced by the European schools of designs and other foreign fashion houses. The sound financial set-up and concentration of clientele with certain tastes in the urban, which has led to a polarized growth of commercial fashion in India. A parallel progress has been the acknowledgement and rejuvenation of the traditional Indian textile fashions, which has found a stable market in tier-II cities. A great detrimental factor to the growth of Fashion Industry in a uniform manner throughout the nation is the thriving market for cheap, low-quality, spurious and imitation fashion. These businesses don't demand any design inputs, as the products are result of direct imitation of imported design. It has sought to disconnect itself from any professional connectivity due to the illegal nature of their business. This also affected the image of the Indian industry in the international market. (Ernst & Young, Inc. 2011)

Architectural and other design fields focusing on the built environment has made its impact in the India. There are a wide variety of colleges offering basic courses in architecture. The government institutes set-up have good facilities, but poorly maintained and consequently the quality of education has also deteriorated. A number of institutes have been opened across India, but has overall suffered because of government apathy. In such a scenario, the private institutes have tried to fill the lacuna of quality education and have found acceptance. However, due to low regulation and quality checks, the quality of private education has suffered. There have been some private institutes of repute, which have made significant contribution, yet the Indian industry places more faith in foreign talent and is more considered more valuable. The Interior design sector has been a niche sector and the local institutes have produced trained designers to meet the market needs.

Automotive design has been the most backward design field in India, with only a handful of quality options available to the people. Its lack of demand can be partially attributed to the government policies in the industry. In order to fuel the local industry the government encourages foreign investment in the automobile sector in partnership with the local entrepreneurs. This has resulted in India emerging as a production house with the designs being provided by the foreign investors. However, the Indian automobile market is different than other international markets, and hence not all the foreign designs have succeeded in India. The sector has realized the need for local influence in the design process. The large Indian conglomerates have also started investing in Research and Development,

which has opened the possibilities for design. The bigger difficulty has been the lack of regulation or government promotion. The sector can be said to be in its nascent stage and presents a bright opportunity for educational institutes to guide the direction.

Industrial design or product design is opening up in India. The local market has suffered due to the strong presence of Chinese products in the domestic and global market, stifling the Indian market. The cheap costs in India mean that India has been a conducive place for companies for establishing production centres. The process of design imitation has also plagued this sector, but the growth of an educated and aware consumer market has also meant that more designers from India are getting opportunities within India. A parallel sector of traditional products has also flourished, but is severely limited in its capacities. India is being seen as a strong emerging market by global industry and many of them have set up their design labs here. Consequently there is an increased demand for product designers who have strong User Research and Innovation skills. (Federation of Indian Chambers of Commerce and Industry 2012)

10.3 EXISTING DESIGN SCHOOLS AND OTHER DESIGN ACTIVITIES

All forms of design education is growing in India. Design education has seen a spurt of growth in the last 5 years or so with many private institutions getting initiated. Till before 5 years, the design education landscape was characterized by Government supported institutions only, which were few in numbers for a country as large as India.

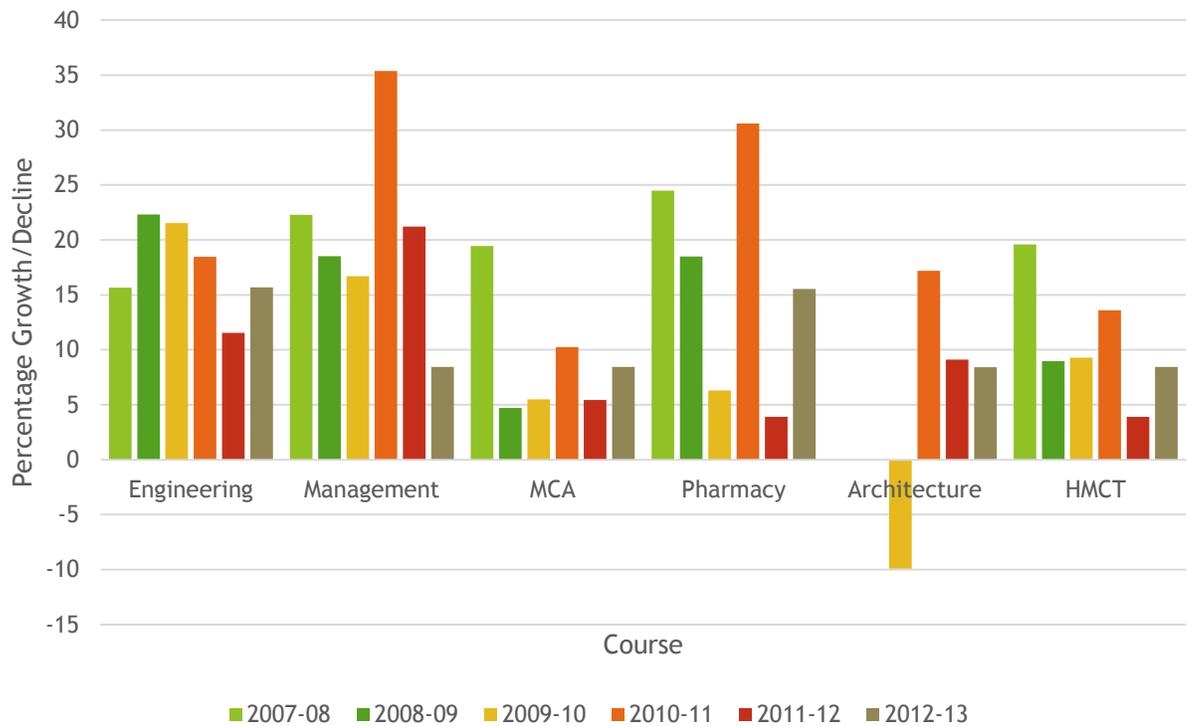


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..12: Growth of Seats in Different Programs in Technical Education

The most expansive scope for design related studies is in the area of architecture and interior design. The obvious reason is that architecture as a domain of study and practice has been well entrenched for a long time. There is also easy transfer-ability from architecture to interiors. Architecture education is governed by the Council of Architecture which is a statutory body and which licenses architects in India for practice as well as recognizes qualifications. Recently some universities have introduced interior design as a specialization within architecture programs. Many universities have initiated three year bachelors program in interior design, which tend to be more interior decoration than interior design.

Proposal for Design School at Navi-Mumbai



Table Error! Use the Home tab to apply 0 to the text that you want to appear here..13: Registration of Architects on a yearly basis

The market for architects has grown steadily, till the 2011, when the economic crisis started taking jobs away from the market. India has been relatively unaffected by the downturn and many see this as a short term trend. With the economy already showing signs of regaining, the demand for architects is likely to continue over a period of 3-4 years and get back to the pre-recession levels. The number of architects in the market in the year 2011 is comparable to the number of architects in the year 1975. The size of the economy has grown manifold since 1975, and the present number of architects is insufficient to meet the market demands.

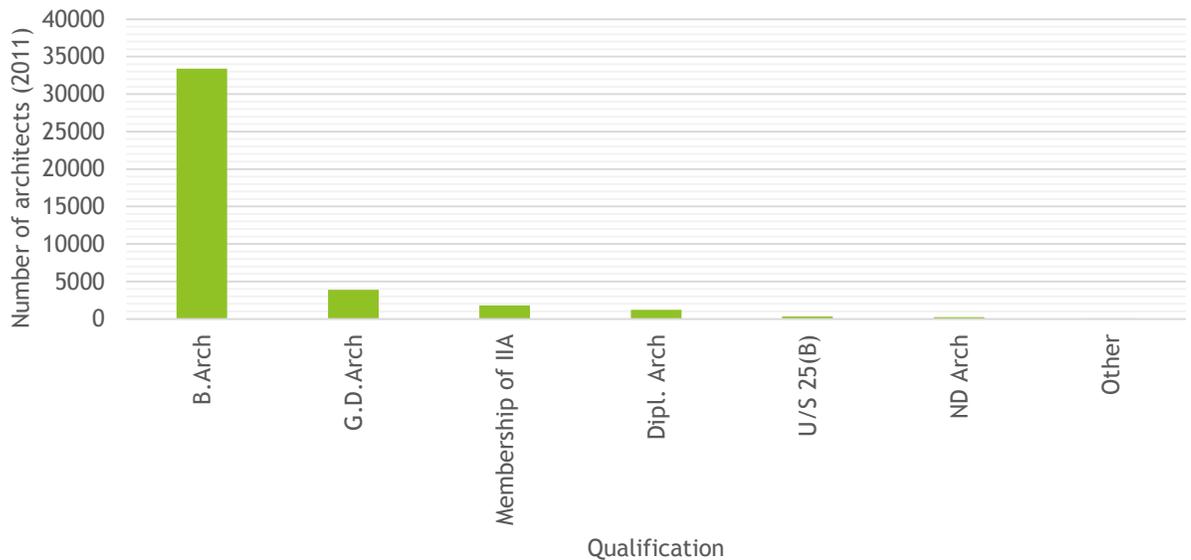


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..14: Qualification of Architects

Animation is growing at a very fast rate primarily for two reasons. The first reason is establishment of animation as a viable career option and second being the abundance availability of animation education in cities of all sizes. Similarly for Fashion Design it is the availability of instruction in this area in all geographies. Fashion and Animation has seen a tremendous growth in urban and semi urban areas where institutes are offering certificate and diploma courses ranging from 3 months duration to 2 years. Many of these institutes are franchises of major institutes. Fashion Design is offered as a 3 year Bachelor's Degree program by many universities and is also offered as a 3 year diploma course post 10 years of school education.

In graphic design, there is a sizeable presence of program called "Applied Arts". Applied arts is a four year program post twelve years of school education and it is mandatory to have approval from All India Council for Technical Education to initiate this program besides university affiliation. Certificate and Diploma programs in the classic graphic design, industrial design and other design disciplines are offered by a handful of institutions. This number is growing with every passing year. Traditional universities within India don't have much options for the students in these fields. The students sometimes also seek to intern directly in firms for learning, after completing their graduation in any field, due to lack of options.

India has a very fragmented design education setup. The initial initiative of the government to set-up centres of excellency as a means to promote design in the industry lost steam after a while due to government inactivity. The sector is driven by various forces from the various government initiatives and policies to established identities in the field of private education to branches of international design education institutes. Some of the large established names in the field of formal design education are:

10.3.1 Educational Institutes

10.3.1.1 National Institute of Design

The National Institute of Design (NID) is internationally acclaimed as one of the foremost multi-disciplinary institutions in the field of design education and research. The Business Week, USA has listed NID as one of the top 25 European & Asian programs in the world. The institute functions as an autonomous body under the department of Industrial Policy & Promotion, Ministry of Commerce & Industry and Government of India. NID is

recognised by the Dept. of Scientific & Industrial Research (DSIR) under Ministry of Science & Technology, Government of India, as a scientific and industrial design research organisation. NID has been a pioneer in industrial design education after Bauhaus and Ulm in Germany and is known for its pursuit of design excellence to make Designed in India, Made for the World a reality. NID's graduates have made a mark in key sectors of commerce, industry and social development by taking role of catalysts and through thought leadership.

There are 3 NIDs established in India - Ahmedabad, Gandhinagar and Bangalore. The plan to build another one in Bhopal is underway. The establishment of NID was a result of several forces, both global and local. The late 1950s saw a confluence of these forces, and this time would be a significant one for Indian culture and education. This was a time of reappraisal and reconstruction in a newly independent India. A young nation was confronted with the mammoth task of nation building, of balancing age old traditions with modern technology and ideas. The National Institute of Design is internationally acclaimed as one of the finest educational and research institutions for Industrial, Communication, Textile and IT Integrated (Experiential) Design. It is an autonomous institution under the aegis of the Ministry of Commerce and Industry, Government of India and is recognised by the Department of Scientific and Industrial Research, Government of India as a Scientific and Industrial Research Organisation. The mandate for NID is to offer world-class design education and to promote design awareness and application towards raising the quality of life by and through education to create design professionals of excellence to help meet India's diverse design needs by recognising the changes in economic and business environment nationally and globally. (Eames 1958)

The curriculum generates the scope for opportunities to integrate experiential and explorative learning in order to understand and achieve a high degree of creative innovation and quality. A flexible framework for student-cantered learning, whereby courses and assignments are able to harness the potential each student has in terms of creative expression and multi-dimensional learning. Each program provides the opportunity to identify, plan and achieve learning goals through an understanding of cultural, social and technological developments in the context of historical, contemporary and individual concerns. The context and relevance is repositioned by the faculty depending on the changing realities of the design profession and the level of professional competence achieved and demonstrated by the students. It provides interdisciplinary and progressive knowledge of design but with a focused understanding of an area of specialisation suited to the professional design practice

at the same time providing ample opportunity to develop innovative and exploratory thinking, necessary technical skills and the ability to locate individual design approaches within the appropriate professional context. It provides thorough understanding of technical, managerial and design fundamentals along with a strong exposure to real life situations so that they are able to experience how the intellectual, creative and other skills acquired could be adopted to benefit the user, society and industry.¹

10.3.1.2 IIT-Bombay - Industrial Design Centre

Industrial Design Centre was set up in 1969 by the Government of India under the auspices of Indian institute of technology Bombay. It began with an academic program in industrial design. The initial efforts were focused on setting up the facilities and developing the faculty. IDC as an institution was conceived to be part of the 'Indian Institute of Technology Bombay'; to give it a strong "result oriented" character so that there is always the possibility to actualize the design concepts emerging from its field of education and research along with a broad technological support from the IIT as a whole.

As the design centre emerged, it was realized that industrial design in a developing country with its varied cultural heritage has a vital role to play in national development. It soon became clear that a profession constantly dealing with development and the future of people will have to inculcate values in the society appropriate to fulfil the physical, social and cultural needs and aspiration of the people; in a manner acceptable to the majority. The efforts at the centre have been concentrated on the task of inculcating these 'desirable values' through education, practice and propagation. The design projects and other activities reported throw light on how this task is being tackled at the Centre.

The education Program at IDC is a unique mix of pedagogic experimentation with pragmatic design approach and blends hard-core problem solving with design research. New thoughts, philosophies and research into several aspects of design are experimented and integrated to have continuous revitalization of the academic programs at IDC. Several areas have been identified for research. Faculty members along with students and other research and design staff work together on these issues. The centre interacts with industries and institutions for promotion and awareness of design. These are in the form of organizing seminars, conducting short term courses and workshops. In the area of design practice, IDC

¹ <http://www.nid.edu/institute/>

offers professional design consultancy and advisory services to industries and other organizations.

IIT has a department dedicated to collaboration with industry and government organizations to foster research and development. Some of its activities are:

- Sponsored Research and Development Projects
- Contract Research / Consultancy Projects
- Joint collaborative programs with other Institutes in India and other countries
- Technology Development Mission Projects
- Sponsored Student Projects
- Externally Funded Research Centres / Facilities
- Industry Funded Laboratories
- Technology Transfer Intellectual Property Generation / Protection
- Specialized Workshops / Courses for the benefit of Industry ²

10.3.1.3 IIT-Guwhati - Department of Design

The Department of Design (DoD), one of the eleven departments at IIT Guwahati, was set up with a vision to enkindle some of the brightest technical minds of the country a passion for innovation in technology driven by a firm understanding, appreciation and celebration of design. The department offers an M.Des. Degree, a B.Des. degree and a PhD degree in Design. The focus of the program is on the study, invention, and creative use of technologies to create effective, usable, enjoyable experiences with technology through interdisciplinary research in engineering, design, behavioural and social sciences, and to understand the impact of technology on individuals, groups, and organizations. The department envisions to produce successful graduates who will be capable of leading the changing scenarios of today and tomorrow through thought, innovation and values. The Department of Design prepares students for their future contributions to technology, industry and society. The department is led by a team of leading professionals from various disciplines with a wealth of experience both in research and in industry. The curriculum reflects the multidisciplinary nature of design. The Instructional program aims to prepare students in the use of analytical and methodical approaches to solving design problems. Issues such as culture studies, aesthetics, human engineering, consumer behaviour, design management, cognitive psychology and

² <http://www.idc.iitb.ac.in/>

related socio-economic factors are researched and integrated into the curriculums. The utilization of cutting edge production and prototyping technology ensures, in the students, a firm base to excel in contemporary work environments. ³

10.3.1.4 National Institute of Fashion Technology

National Institute of Fashion Technology was set up in 1986 under the aegis of the Ministry of Textiles, Government of India. It has emerged as the premier Institute of Design, Management and Technology, developing professionals for taking up leadership positions in fashion business in the emerging global scenario. NIFT has been granted statutory status under the act of Parliament of India in 2006, empowering the Institute to award degrees and other academic distinctions. The Institute is a pioneer in envisioning and evolving fashion business education in the country through a network of fifteen professionally managed domestic centres at Bangalore, Bhopal, Bhubaneswar, Chennai, Gandhinagar, Hyderabad, Jodhpur, Kangra, Kannur, Kolkata, Mumbai, New Delhi, Patna, Raebareli and Shillong. NIFT has set academic standards and excelled in thought leadership by providing a pool of creative genius and technically competent professionals. The Institute provides a common platform for fashion education, research and training.

The curriculum at NIFT allows students to easily blend into a global network, as well as acquire a greater appreciation of local industry trends. The multidisciplinary and broad-based structure aims at an all-round development of students. Deriving from the changing paradigms of industry and commerce, its content as well as the methodology is constantly reviewed by academia and industry experts. Teaching at the Institute incorporates a cohesive, contextual and nurturing environment for learning. The emphasis is on self-motivated learning by using information, experience and practice. The teaching methodology aims at using the inputs from core functional areas to inter-disciplinary issues and problem solving. Students undertake classroom and workshop assignments, conduct field observations, make presentations and participate in group discussions and seminars and are encouraged to develop industry linkages.

Some activities undertaken at NIFT are:

³ <http://www.iitg.ac.in/>

- **Craft Survey and Documentation:** As part of the Craft Cluster initiative of NIFT, students undertake field visits to closely interact and work with craftsmen to add value to their products.
- **Educational Visits:** Students frequently visit industrial units to integrate theory with practice. They also visit museums, art galleries, exhibitions, and trade fairs to keep abreast with latest fashion trends.
- **Industry Internship:** Students intern for six to eight weeks to understand the structural and functional constituents of the industry. During the internship, students learn to adapt to real industry situations and are assigned practical projects, which equip them for decision-making in a realistic environment. The internship also helps strengthen the relationship between industry and students.
- **Design Collection/Diploma Project:** The graduation project undertaken by students encapsulates the various skills imbibed during the course of study. The industry-sponsored project provides a challenging platform for students to extend and demonstrate academic learning.⁴

10.3.1.5 School of Planning and Architecture

The School of Planning and Architecture (SPAs) are a group of autonomous public institutes of higher education. The SPAs lists three institutes located at Bhopal, Delhi and Vijayawada. They were established with the objectives of providing quality Architecture and physical planning education. The SPAs primarily offer undergraduate, postgraduate, doctoral and executive education programs. Each SPA is autonomous and exercises independent control over its day-to-day operations. However, the administration of all SPAs and the overall strategy of SPAs is overseen by the SPA council. The SPA Council is headed by India's Minister of Human Resource Development and consists of the chairpersons and directors of all SPAs and senior officials from the Ministry of Human Resource Development of the Government of India.

The School offers specialized courses, which exclusively provides training at various levels, in different aspects of human habitat and environment. The School has taken lead in introducing academic programs in specialized fields both at Bachelor's and Master's level,

⁴ <http://www.nift.ac.in/>

some of which are even today not available elsewhere in India. The School, in striving for excellence, has always been in the lead in extending education and research to new frontiers of knowledge. Human habitat and environment being the basic concern of the School, the spectrum of academic programs is being continuously extended by providing programs in new fields and emerging areas for which facilities are not available, as yet, anywhere else in the country. ⁵

10.3.1.6 Centre for Environmental Planning and Technology

CEPT University focuses on understanding, designing, planning, constructing and managing human habitats. Its teaching programs build thoughtful professionals and its research programs deepen understanding of human settlements. CEPT University also undertakes advocacy and advisory projects to further the goal of making habitats more liveable. CEPT and the various schools that it comprised were established by the Ahmedabad Education Society with the support of the Government of Gujarat and the Government of India. The Government of Gujarat incorporated CEPT as a university in 2005. The Department of Scientific and Industrial Research (DSIR) of the Government of India recognizes the University as a Scientific and Industrial Research Organization (SIRO).

The teaching programs at CEPT University focus on building professional capacities and therefore they are cantered on 'studios' or 'labs'. Here, students engage with well-designed life-like problems. Coursework, seminars and research assignments, aimed at developing conceptual and analytical abilities of students, and skill-enhancing workshops support learning in studios and labs. Students also have to enrol in travel and documentation programs and to intern in professional offices to widen their exposure. CEPT University cherishes the individual interests and abilities of its students. To enable each student to chart a unique course of study and realize his or her own individual potential, programs mandate only three quarters of the total credits that students have to complete. Students can complete the remaining credits by choosing from the wide range of elective courses on offer at any of the five faculties of the university. The Faculties also make all attempts to ensure that even within the mandatory portion of the program, students can choose courses to suit their practice orientation. ⁶

⁵ http://en.wikipedia.org/wiki/School_of_Planning_and_Architecture

⁶ <http://www.cept.ac.in/>

10.3.1.7 Srishti School of Art and Design

Srishti School of Art, Design and Technology was founded in 1996 by the Ujwal Trust with the objective of providing art and design education in an environment of creativity to maximize the individual's potential. Srishti's culture encourages thinking, questioning and experimenting to harness the artistic and intellectual potential of each individual and place the institution at the leading edge of contemporary art and design discourse. A multi-disciplinary approach inculcates self-initiated learning and independent thinking and expands perceptual perspectives. Regular interaction with design studios, production and distribution centres, community projects, retail establishments and industry forms a vital bridge between Srishti and the world. Srishti has a strong indigenous cultural grounding in the teaching of the visual arts and also provides a liberal arts curriculum comparable to reputed institutions in the West. Srishti is interfacing with institutions across the world with a vision for and commitment to quality education through new technologies and pedagogies.

The institutes runs the following departments under its wing:

- **Centre for Education, Research, Training and Development** - It was set up in Srishti School of Art Design and Technology to provide world-class innovation and capacity-building services in education.
- **Centre for Experimental Media Arts** - It is an innovative lab where artists, hackers, engineers, and scientists come together to develop new tools and methodologies for investigating and acting in the world.
- **The Kabir Project** - The Kabir project brings together the experiences of a series of ongoing journeys in quest of this 15th century north Indian mystic poet as well as other Bhakti and Sufi poets in our contemporary worlds. Started in 2003, these journeys inquire into the spiritual and socio-political resonances of Kabir's poetry through songs, images and conversations.
- **Srishti Labs** - A lab providing professional strategic design services for technology innovators. Undertakes systematic exploration to identify the best value opportunities and increase the success potential of innovation investments.
- **The Centre for Public History** - It seeks to democratize history through design, using digital media and digital technologies. The Centre focuses on incorporating multiple and marginalized voices into history, using oral history interviewing, and on reaching diverse audiences through new and engaging forms of dissemination.

- **The Toy Lab** - The Toy Lab is a place for the exploration for the design of toys and interactive media to excite and trigger off the imagination of children
- **Grass Roots Innovation Design Studio** - The aim of this project is value addition to Grass-roots Technologies collected by the National Innovation Foundation, Ahmedabad.
- **LED Lab** - It explores the intersections between law and design, through active engagement with the environment and its community stewards; to bring a design influence into legal education, policy, culture and development; towards strengthening alliances between the environment and its stakeholders, making way for informed action, towards a sustainable future.⁷

10.3.1.8 Raffles Education

Raffles Education Corp has many years of experience in offering strong academic and professional programs within its network of colleges and universities. Raffles University System is central to the successful development of relevant high quality education for the Group. It has grown from establishing its first college in Singapore in 1990 to operating 33 colleges across 13 countries.

Raffles University System has a stringent and rigorous reporting and audit system to ensure quality standards and assurance, as well as operational compliance. It coordinates standards between the Universities. It works in partnership with a number of well-known universities within a major international education network that offers students a wide range of opportunities to study either locally or through a combination of local and international study. This network supports the group's commitment and determination to offer first class professionally relevant education programs that equip its students to compete successfully within a global economy. At the heart of all Raffles programs lies a philosophy of offering curricula and student experiences that encourage the development of creativity and entrepreneurship, so as to empower them to maximise their potential in their lives and careers. The chain of Raffles Institutes have an operation in several countries which includes China, Indonesia, India, Singapore, Australia, Cambodia, Malaysia, Mongolia, Bangladesh, Sri Lanka, New Zealand, Philippines and Thailand.

⁷ <http://srishti.ac.in/>

Raffles Millennium International (RMI) is a Joint Venture between "Raffles Education Corp limited" in Singapore and "Educomp Solutions Limited" in India. Both these entities are publicly listed companies with an excellent track record in education. Within India, it has set-up institutes in Delhi, Mumbai, Hyderabad, Bangalore, Ahmedabad, Chennai and Noida.⁸

10.3.1.9 Pearl Academy

Since its inception twenty years ago, Pearl Academy has evolved into a globally renowned institution of higher learning with a focus on Internationalism, entrepreneurship and employability; catering to the needs of the design, fashion, business and retail industry. It operates with a motive of being amongst the leading global institutes in art, design, fashion and related business education through continuous innovation, high quality standards and delightful experience to students, employees and the industries that we serve. The core purpose of academy is to provide education and service for the development of society. The Academy is committed to Excellence, Innovation, and Customer Satisfaction and Development through self and shared efforts.

Pearl Academy is a strategic partner of the Laureate International Universities network, which is the leading network of private post-secondary institutions worldwide. It has a worldwide network of over 60 higher education institutions spread across 29 countries. Pearl Academy encourages its faculty and students to get global/pan-India exposure by affiliating/collaborating with top higher education institutions in the domain of Art, Fashion & Design in various parts of the world. Our extensive international tie-ups facilitate about 200 students each year to participate in reciprocal exchanges, international conferences, study tours and summer school programs.

Pearl Academy conducts the Post-Graduate Certificate in Higher Education Program (PGCHE) for its faculty. In a year-long course, the faculty members are trained in class-room practices, academic pedagogy and innovative methods of teaching and learning, customised to fashion education. The PGCHE Certificate is awarded by Nottingham Trent University, UK. So far, 63 faculty members from across all centres have participated in and have successfully completed the Certificate Program. The Academy intends to have its entire faculty acquire formal training under PGCHE.

⁸ http://www.raffles-education-corporation.com/College_Information.html

Pearl Academy believes that to succeed professionally, it is important to have an interaction with seasoned industry experts who can guide, mentor and support the students to gain an experience that reaches beyond the classroom. The institute has received several awards for providing quality education and acknowledgements from the industry for meeting their demand of qualified professionals. ⁹

10.3.1.10 DSK Supinfocom

DSK Supinfocom is a result of a joint venture between the DSK Group and Globally recognized French Institute -Chamber of Commerce and Industry of Grand Hainaut (CCI). DSK Supinfocom is regarded as an exemplary ambience motivating and nurturing the creative genius minds and enriching learning. The academics are fully controlled by the French institute to match the international standards of the education and trainers are recruited on a full time basis from Europe. DSK Supinfocom is committed to enhance the creativity and talent of every student, by motivating them to do their best broadening their vision and horizon.

The Chamber of Commerce and Industry of Grand Hainaut is one of the 4 territorial chambers of commerce in the Nord-Pas-de-Calais region. The Chamber of Commerce and Industry of Grand Hainaut are public institutions that represent the interests of industries, commerce and services with the concerned public authorities. The Chambers of Commerce actively contribute to the economic development of the region and manage infrastructure including airports, ports and economic zones. They also offer training in various fields, for companies and individuals.¹⁰

10.3.1.11 Symbiosis School of Design

Symbiosis is a family of 43 academic institutions, imparting quality education for over 38 years. It is host to over 27,000 Indian and International students on campus and over 1,00,000 students off campus. The campuses epitomize the Symbiosis motto, 'Promoting International Understanding through Quality Education' and are a beehive of international students from all across the globe, being privy to Indian culture and hospitality. Keeping its excellent track record in mind, in 2002, the Ministry of Human Resources Development,

⁹ <http://pearlacademy.com/>

¹⁰ <http://www.dsksic.com/>

Government of India conferred the 'Deemed to be University' status on Symbiosis, and further in 2006 the University Grants Commission, Government of India withdrew the word Deemed and renamed the University as Symbiosis International University. Symbiosis was established in 1971 to cater to the needs of foreign students studying in Pune but now has campuses at Pune, Nashik and Kolhapur in Maharashtra. The campuses outside Maharashtra are at Noida, Bangalore and Hyderabad, which provides education in several fields.¹¹

10.3.1.12 List of Design Education Institutes in India

	MMR	NCR	Chennai	B'lore	Pune	A'bad	Kolkata	Kerala	H'bad	Others	TOT
Animation	9	10	5	10	6	4	5	5	4	0	58
Graphic/Int Design	4	6	2	2	3	3	2	1	2	4	29
Film Design	3	3	1	1	4	1	2	0	0	0	15
Industrial Design	3	5	1	5	4	2	1	1	0	6	28
Auto. Design	1	0	0	0	3	1	0	0	0	0	5
Fashion Design	5	9	3	4	4	4	3	0	2	4	38
Arch & Planning	17	18	17	12	10	5	3	9	5	0	96
	42	51	29	34	34	20	16	16	13	14	269

¹¹ <http://www.sid.edu.in/>

10.3.2 Private and Government Organizations

Apart from the educational institutes there are private and government organizations which are shaping the design sector in India.

10.3.2.1 India Design Association (InDeAs)

InDeAs is a pan-India networking, showcasing and events platform for India's design community from across the spectrum. The association promotes and creates awareness about the design profession in the country. InDeAs has presently a membership of 318 with commitments for 8 corporate membership. InDeAs will open chapters in all the major places and regions in India. The Association is presently located at IDC, IIT Bombay until it acquires its own office premises.¹²

10.3.2.2 India Design Association (IDA)

The association is an inclusive body representing all the stakeholders of Indian design industry. The association will represent all the design disciplines as known today. The major objectives of the association are to further the cause of design as a profession and business, promote world-class, good Indian Design within and outside of India, to act as the reference point for the Government of India and other related bodies, to work closely with the India Design Council as an advisory body, create design awareness, set up design centers, to link up with national and international bodies to help promote the better understanding of design and to become a voice of the design Indian industry at government policy level and international arena.

10.3.2.3 Indian Society of Landscape Architects

Indian Society of Landscape Architects (ISOLA) is a professional body of Landscape Architects, established in 2003, to promote professional service in the art and science of Landscape Architecture/ Landscape Design as a whole, to conserve natural resources /environment/ landscape, and promote environmental concerns to the community. The Society has about 300 members from different states of the Country and some across the world. ISOLA is a member of the International Federation of Landscape Architects.

¹² <http://www.in-de-as.org>

10.3.2.4 Association of Designer of India

Association of Designer of India's vision is to be a world class network representing professional interests of Indian Design community, creating a meaningful interface between design professionals, people as users, the industry, education institutions and the policy makers. ADI is committed to promoting best practices in the profession of design in India by strengthening and promoting the capabilities of the Indian design profession, as well as amplifying and presenting a unified voice to influence public policy, shape the industry and benefit the people at large. The ADI is managed by the National Executive Committee (NEC) who are elected biennially by members. The National Executive Committee is responsible for running ADI, creating regional chapters and elected local Managing Committees, formulating policies and initiating projects to promote design and the interests of its members. Key objectives of ADI are:

- Create a strong network of designers from India,
- Build a platform for sharing design thinking and design case studies.
- Become a national strategic body of the design professional community advising at government & policy- level, acting as an independent professional body represented at the India Design Council and any other Chartered Society of Designers.
- Lead the design community towards better quality of service, responsible design and smooth interface with the industry
- Promote compliance of ethical practice code amongst design community in India
- Increase awareness of "good design" amongst the "people" and "industry", through outreach programs, publications, events & installations.
- Encourage Chapter level activity in promoting design and design related activities
- Build a national movement of young designers
- ADI shall network with national and international bodies related with the profession
- Promote India as a design service destination ¹³

10.3.2.5 Council of Architecture

The Architect's Act 1978 leads to the formation of the Council of Architecture under its provisions. It is a body corporate, which provides for the following things:

¹³ <http://www.adi.org.in/>

- Registration of architects;
- Educational standards;
- Practice standards for practicing architects; and
- Recognized qualifications.¹⁴

10.3.2.6 Indian Institute of Architects

IIA is the national body of Architects in the country with more than 15000 members. The Institute has a major role to play in promoting the profession of architecture by organising and uniting in fellowship the Architects of India to promote aesthetic, scientific and practical efficiency of the profession both in Practice and in Education.'¹⁵

10.3.2.7 Crafts Council of India

'The Crafts Council of India is a voluntary, non - governmental organisation, working in the craft sector, for the welfare of crafts persons and the development of handicrafts. CCI was established in 1964 by Smt. Kamala Devi Chattopadhyay and has its headquarters in Chennai. CCI is the apex body with a network of 14 affiliated State Councils.'¹⁶

10.3.2.8 India Design Council

Other initiatives by the government to promote design include the establishment of the India Design Council. The council is formed by 22 eminent people from the field of design, academia, industry organizations and academia. It has been instituted with the following points as its objectives:

- Design Awareness
 - Creating public awareness on quality design its effectiveness: Use of design as strategic element for business excellence and as a key factor for innovation, to improve people's quality of life.
 - Promoting design awareness and effectiveness programs in private public sectors-Country based Brand building.

¹⁴ <http://www.coa-india.org>

¹⁵ <http://www.designinindia.net/resources/institutions/associations/index.html>

¹⁶ <http://www.designinindia.net/resources/institutions/associations/index.html>

- Promoting Design as a tool for innovation, productivity and economic competitiveness in business and industry.
- Encouraging Micro, Small Medium industries to follow the best design practices.
- Promoting the concept of environment friendly designs and promote designers and industry to work towards environment friendly design.
- Design Development
 - Promoting design investment in Industry research organizations - work towards tax benefits for design research.
 - Assisting industries in appreciating the importance of quality and effective design management in product manufacturing to upgrade market competitiveness.
 - Initiating Educational Institution/Industry Partnerships to impart both design knowledge and business knowledge such as marketing/entrepreneurship.
 - Promoting best design practices innovation in Design.
 - Encouraging Design Research and Establish National Grants for design research.
 - Building a common platform for integrating design resources of the government, the manufacturing and academic circles.
 - Acting as a primary knowledge management body for design in India- integrate domestic cultural and creative design information, building a platform to share and exchange knowledge, exploring creativity - Operate a design database.
 - Undertaking awareness programs in Intellectual Property Rights in the Design Industry.
- Promoting India as a Top Design Destination
 - Setting up a museum/design centre to showcase the role of design in everyday life to visitors from India and abroad.
 - Building a smooth mechanism and channels of international cooperation, promoting exchange of Indian design and Indian designers.¹⁷

10.3.2.9 Fashion Design Council of India

A not for profit organization, Fashion Design Council of India, is the apex body of fashion design in India, represented by over 350 members. Founded on the premise of

¹⁷ <http://www.indiadesignmark.in/about/india-design-council>

promoting, nurturing and representing the best of fashion design talent in the country; its prime objective is to propagate the Business of Fashion.

FDCI as part of its initiatives produces a calendar of fashion events that includes the bi-annual prêt weeks for womenswear -Wills Lifestyle India Fashion Week, a dedicated week for men's fashion-Van Heusen India Men's Week, and the annual platform for couture-Synergy 1 Delhi Couture Week. Over the years, FDCI has embarked on various path-breaking initiatives to cultivate and nurture designers and their businesses, and make Indian fashion global.

As an apex body for the fashion industry, FDCI is the nodal point for activities with the government and works closely with various Ministries. The Ministry of Commerce and Industry is supporting FDCI initiatives and facilitates international trade at the fashion weeks. It has also played an important role in developing marketing strategies, setting standards and providing tangible value for its members over the last decade. A pan-Indian fashion body, FDCI weaves designers from various states, cities and towns of India into one cohesive body. Representing both established and emerging designers, it plays an important role in guiding the industry towards its goal of sustainable growth. ¹⁸

10.3.2.10 *The Animation Society of India*

The Animation Society of India has been formed with a view to increase awareness of the medium of animation in India. It aims to educate the emerging generation and the public at large and at the same time provide a platform for exchange of creative and technical information within the existing art and animation fraternity in India. The Society is formally registered as a non-profit organisation with the office of the Honourable Charities Commissioner, Mumbai. All members devote their time, efforts and expertise to the administration and operations of the Society strictly on volunteer basis.

The Society conducts lecture demonstrations, interactive workshops, seminars, awareness programs throughout the year. On average this translates to 1 event per month. It also hosts the biggest annual animation festival in the subcontinent -Anifest India. All these events have a one point agenda and that is to facilitate growth of the individual through the sharing of expertise. Since its inception in 2001, distinguished speakers from across the world have graced the TASI platform to meet and interact with animation enthusiasts. Through its

¹⁸ http://www.fdc.org/about_us.aspx

various events and programs, the Society pro-actively encourages all genres and forms of animation and this has enabled students, professionals and even enthusiasts to share their work with the international animation community.¹⁹

10.3.3 Government Policies

Government policies and actions also make a big impact on the way of things.

10.3.3.1 National Design Policy

Realizing the increasing importance of design in economic, industrial and societal development and in improving quality of products and services, the Government of India has initiated a consultative process with industry, designers and other stakeholders to develop the broad contours of a National Design Policy. The vision behind initiating a ‘National Design Policy’ is to have a “design enabled Indian industry” which could impact both the national economy and the quality of life in a positive manner. The latest measure by the government entails the following measures:

- Preparation of a platform for creative design development, design promotion and partnerships across many sectors, states, and regions for integrating design with traditional and technological resources;
- Presentation of Indian designs and innovations on the international arena through strategic integration and cooperation with international design organizations;
- Global positioning and branding of Indian designs and making “designed in India” a by-word for quality and utility in conjunction with “Made in India” and “Served from India”;
- Promotion of Indian design through a well-defined and managed regulatory, promotional and institutional framework;
- Raising Indian design education to global standards of excellence;
- Creation of original Indian designs in products and services drawing upon India’s rich craft traditions and cultural heritage;
- Making India a major hub for exports and outsourcing of designs and creative process for achieving a design-enabled innovation economy;
- Enhancing the overall tangible and intangible quality parameters of products and services through design;

¹⁹ <http://www.tasionline.org/about-2/>

- Creation of awareness among manufacturers and service providers, particularly SMEs and cottage industries, about the competitive advantage of original designs;
- Attracting investments, including foreign direct investments, in design services and design related R&D; and
- Involving industry and professional designers in the collaborative development of the design profession.²⁰

10.3.3.2 Design Clinics for MSME

It is an innovative initiative to introduce design assistance for Medium and Small Enterprises. MSMEs constitute 45% of Indian industrial production and 40% of Indian exports and employ about 41 million people. It was initiated in the 11th Plan under the National Manufacturing Competitiveness Program, with a budget of 73 crores. The goal is to increase MSME competitiveness by increased exposure to design-related thinking, intervention and application and at the same time improving market exposure.

²⁰ <http://pib.nic.in/newsite/erelease.aspx?relid=24647>

10.3.4 Awards and Recognition

General

- CII Indian Design Excellence Recognition
- Young Creative Entrepreneur
- NCPEDP MPHASIS Universal Design Awards

Product Design

- Livingtec New Designer Awards
- Stainless Innovation Awards

Spatial and Interior Design

- IIID Copper Award
- IIID Anchor Awards
- IIID Godrej Innovation Awards
- Elle Decor International Design Awards
- Architect and Interior Awards

Fashion Design

- Marie Claire Fashion Awards
- Footwear Design Awards

Animation Awards

- 24fps Animation Awards
- TASI Viewers Choice Awards
- CGTantra Community Awards
- FICCI FRAMES Awards

Automotive

- NDTV Car & Bike Awards
- Autocar India Awards

Graphics

- INDIASTAR National Award
- Visual Merchandising and Retail Design Awards

10.4 SHORTAGE OF DESIGNERS

"Design, as a profession, is young in our country, and there is a shortage of designers nationally," says Sudhakar Nadkarni, who pioneered design education in India by setting up the Industrial Design Centre at IIT-Bombay in 1969 and the Department of Design at IIT-Guwahati in 1997.

The typical buyers of design services include appliance manufacturers, machine tool manufacturers, automotive industry, furniture manufacturers, retail industry, hospitality industry, Telecom and IT industry, FMCG companies, banking and insurance companies, publishing companies, apparel and footwear companies, pharmaceutical industry etc. Domains such as education, NGOs, institutions, real estate, government, etc. sporadically use design services. Design is evolving to become more strategic in nature. It means that businesses use design across the length of their development process as also they use design to find new areas of business. Companies use design in different ways. Some use it as strategic tool and some relegate it to be used at the end of the development process for styling purposes. A handful of Indian companies use design strategically.



Table Error! Use the Home tab to apply 0 to the text that you want to appear here..15: Number of design programs

With the changing character of the Indian industry, where it is producing more and more original products, the role of designers is also becoming more intensive. Yet design industry lags behind other professional services domains in numerical terms when looked at in terms of turnover and number of employees. Architecture, Interior, Animation / New Media, Fashion Design are leading domains within the design industry. Other segments are far behind at present. However with the change in the economic scenario, design domains such as graphic design, industrial design and human computer interaction are growing at a fast clip.

The number of design companies is growing as also there is growth in existing companies. There is a good trend of designers opting to start their own setup. Hence most companies existing today are new. The existing companies are consolidating further by adding more services to their portfolio within diverse design disciplines. Multinational corporations are focusing on India as a new market for trading their products/services. They understand that successes elsewhere may not necessarily translate in a similar way in India. They will need to understand the market, the sensibilities of the people and respond to them through their offerings. Global corporations will need to work with Indian designers to understand the local market.

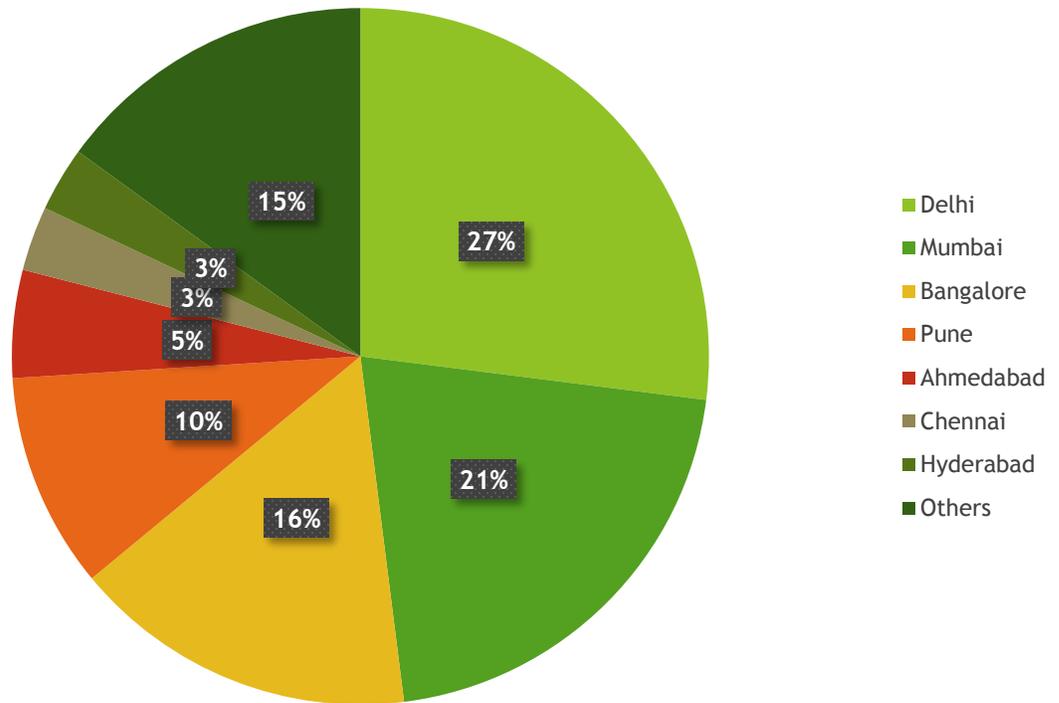


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..16: Concentration of design practitioners

In-house design departments are prevalent in companies dealing with products, automobiles. This can be attributed to the huge involvement of design in every part of their processes, fashion and accessories, software and hardware, furniture design as the companies try to streamline their businesses and reduce capital outflow to consultants. Multi-nationals like LG Electronics, Whirlpool, Philips, General Motors, Renault, AMD, Google, GE, Microsoft, Nokia, Motorola, Yahoo and Oracle have all set up their own in house design units in India. The in-house design departments of the MNC's cater to creation of India specific offerings with an aim to create a niche position in the Indian markets. At the same time they also cater to the needs of other markets, with many projects being done in India, for their international branches due to the relatively cheaper input costs in India.

In this situation of an expanding domestic market, increasing designs being outsourced to here from other countries and establishment of in-house design cells by big multinationals in India, there has been a surge in the demand for designers. Despite the growth of the design education sector, it has not been uniform across all sectors, and even across the geography of India. Indian design has been appreciated at the international level but it also suffers from unavailability of quality and qualified designers. The bright performance of Indian design is

not a direct result of the attempt to boost the sector. A part may be attributed to the innate skill and talent of the hard-working professionals, who may not have even been trained in any specific way. Due to the shortage of professionals, the industry has adjusted by hiring professionals with backgrounds from other fields. The industry has also complained about the low quality of the students from the education sector repeatedly. There is often a case of companies hiring professionals who have acquired proficiency in the usage of certain tools in other sectors, and have been conditioned to meet specific demands. The shortage has been felt at all levels, but the companies always try to improvise to stay afloat.

An impediment in the growth of design programs has been the absence of recognizing universities. Universities are not open to recognize design as a faculty and bring various design domains under this faculty. Hence, very few institutions can initiate design education by applying for affiliations to these universities as they fear the risk of failure due to lack of recognition by an established university. The government initiatives may have raised the quality of the creamy layer of the design market, but a lot more can be done to improve the quality of the average design professional. Support from the government in design education especially to the private institutions has been a little short of forthcoming, and India may witness another education boom like it did in the IT, Management and Medical fields if proper groundwork is built. Due to the lack of proper regulation and quality checks, the quality of education has suffered, especially in the private institutions. There is a lot of scepticism among people about the field as a career option. The average Indian student after passing out from junior college, considers the option of taking formal design training only if he has a special interest in it and is specially talented. Design as a career option is not thought of an option as often as a career in management, engineering, medicine or finance. Due to the combined above reasons there is a shortfall in the supply of trained qualified professionals in design for the design companies.

"I've worked as a design engineer, both in the US and India, and I have designed products as well as computer fonts for Indian languages. I personally think India can be a design powerhouse like Italy or Sweden. We need to create many more formal institutes of industrial design, so engineers and non-engineers alike, people from art field can join the art field, can join the design field. Also, all engineering courses must have one module dedicated to design. We need to internalize aesthetics, good design and sense and usability into our culture, like in Japan."

- Prithviraj Chavan, Ex-Chief Minister, Maharashtra

"India provides the most stimulating environment for a graphic designer - chaos, vibrancy, diversity, cultural spread. But we do not have an education system which focuses on concepts and process - a structured approach to a client's problem. So, our strength is in craft but less in strategy. When we get our strategy concepts in place, we will have an enviable graphics communication industry."

- Rajesh Kejriwal, Founder, Kyoorius Exchange

"Investing in branding is a hugely expensive exercise, as well as a very time-consuming one. But the payoffs are very evident. Keeping the long-term impacts and benefits in mind, it is well worth it. I would go a step further to say that it is a necessity. You can't have an identity without having associations with it, personalizing the group in a way. I can't see a situation where a group like us would not have created a brand."

- Kumar Mangalam Birla, Chairman Aditya Birla Group - one of India's biggest industrial houses and a veteran of the Indian business environment from an excerpt from interviews with Preeti Vyas

"For every problem, there is a design solution. Design is a user-focused, prototype based development tool that can make our organization adapt to the fast changing external environment."

- Kishore Biyani, Founder and CEO, Future Group - one of the prime innovators in the Indian consumer market as told to Aparna Piramal Raje for Mint newspaper's 'Business and Design' series of articles

"If you want to move up the value chain in industry and in business, if you want to get higher prices for your products and services, you will be unable to do so unless you have a very high component of design integrated into these services and products. We would otherwise be condemned to remain at the bottom of the food chain simply fighting to be the lowest cost producer. Design is an unappreciated but absolutely critical element in moving up the value chain in the industry."

- Anand Mahindra, VC and MD, Mahindra & Mahindra - one of India's leading business conglomerates leading in design innovation.

"At Godrej Interio design is an integral part of business strategy. It not only performs a holistic role for business to achieve its overall strategic objectives, but also is fundamental to to strategic brand talent."

- Anil Sain Mathur, COO, Godrej Interio

"When we are thinking about design, we are thinking about ease of productivity from a making point of view, ease of opening, ease of re-sealing, as well as texture, bite and taste. There is a lot of science, a lot of intuitive thinking and a lot to of just very pragmatic insight and knowledge that goes into designing. We think about design being intrinsic to the brand."

- Vinita Bali, MD, Britannia Industries

"Design is one of the key themes that runs through the company."

- Harish Bhatt, COO, Titan Industries

"Today no design job that comes to us is plain. It will begin with: 'This is the competitive scenario, these are the insights you need to identify for your business.' It will always entail business and competitors."

- Ashish Deshpande, Product Designer and Co-Founder, Elephant Design and Strategy

11 PROJECT DETAILS

11.1 INTRODUCTION MAHARASHTRA/MMR

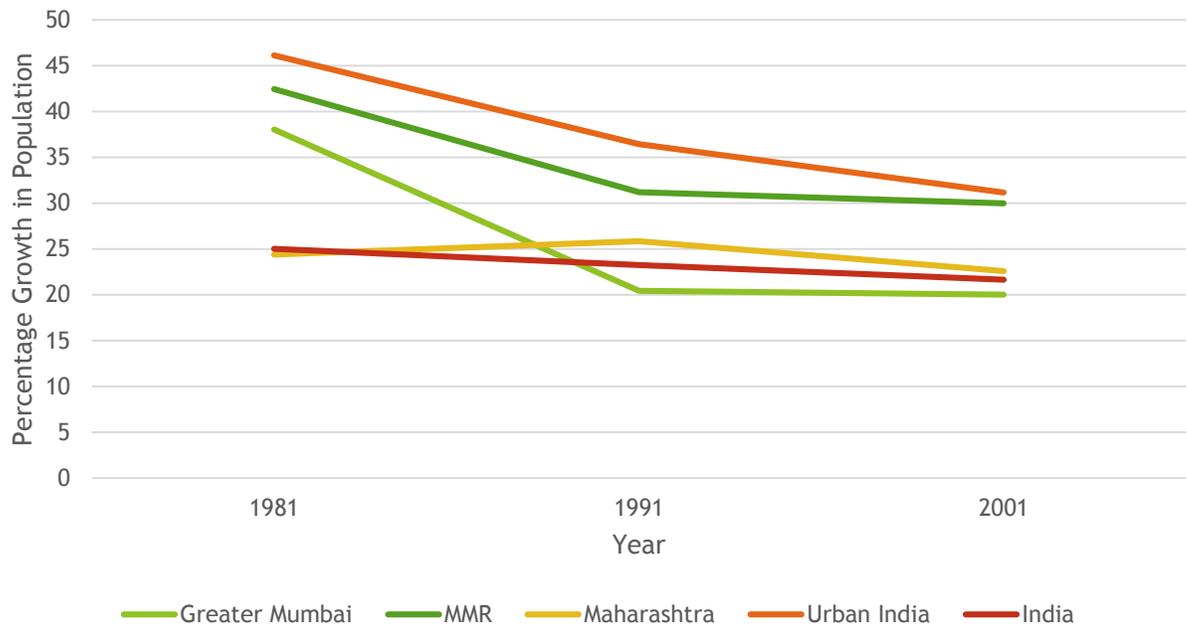
Overview

Maharashtra is a state in the western region of India. It is the second most populous state and third largest state by area in India. Maharashtra is the wealthiest state in India, contributing 15% of the country's industrial output and 13.3% of its GDP (2006-2007 figures). Maharashtra is bordered by the Arabian Sea to the west, Gujarat and the Union territory of Dadra and Nagar Haveli to the northwest, Madhya Pradesh to the north and northeast, Chhattisgarh to the east, Karnataka to the south, Andhra Pradesh to the southeast and Goa to the southwest. Mumbai, the capital city of the state, is India's largest city and the financial capital of the nation. Nagpur is the second capital of the state. Marathi is the state's official language. Maharashtra is the world's second most populous first-level administrative country sub-division. (Maharashtra 2014)

If the statistics of Maharashtra was compared to other nations on an international level, Maharashtra would be the world's twelfth most populous country ahead of Philippines. Maharashtra has three of the fifteen most important cities of India: Pune, Nagpur, and Mumbai. Favourable economic policies in the 1970s led to Maharashtra becoming India's leading industrial state in the last quarter of the 20th century. Over 41% of the S&P CNX 500 conglomerates have corporate offices in Maharashtra. It is the most urbanised state with urban population of 42% of whole population. Major industries in Maharashtra include chemical and allied products, electrical and non-electrical machinery, textiles, petroleum and allied products. Other important industries include metal products, wine, jewellery, pharmaceuticals, engineering goods, machine tools, steel and iron castings and plastic wares.

Mumbai, the capital of Maharashtra and the financial capital of India, houses the headquarters of all major banks, financial institutions, insurance companies, leading airlines in India. India's largest stock exchange Bombay Stock Exchange. Maharashtra has set up software parks in Pune, Navi Mumbai, Aurangabad, Nagpur and Nashik. Maharashtra is the second largest exporter of software products with annual exports of INR180 billion and accounts for more than 30 per cent of the country's software exports, with over 1,200 software units based in the state.

Maharashtra has the largest road network in India at 267,452 kilometres. 17 National Highways connect Maharashtra to six neighbouring states and has a large state highway network. 97.5 per cent of the villages in the state are connected by all-weather roads. The Yeshwantrao Chavan Mumbai-Pune Expressway, the first access controlled toll road project in India was made fully operational in April 2002. The state is well-connected to other parts of the country with a railway network spanning 5,983 km between four Railways. Maharashtra also has suburban railway networks that carry around 6.4 million passengers every day.



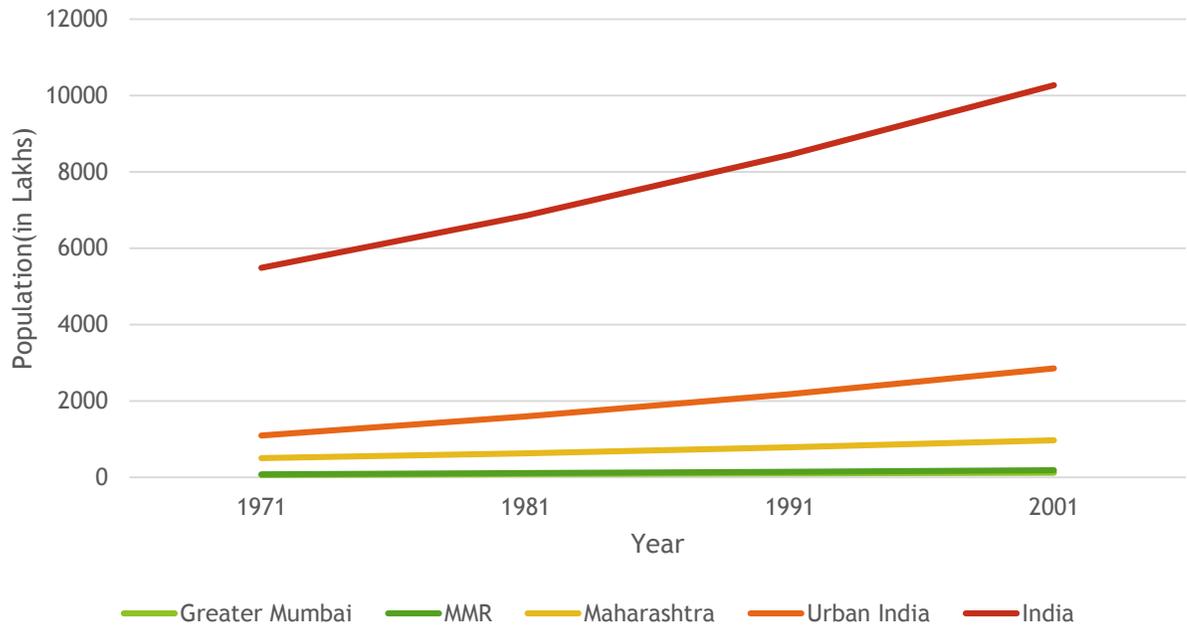


Figure 11-1: Comparison of population growth statistics

The booming Indian economy, growing tourism industry, entry of low cost airlines, liberalisation of international bi-lateral agreements and liberalisation of civil aviation policy at the centre has resulted in an unprecedented growth in air traffic. Jawaharlal Nehru Port Trust in Navi Mumbai is the busiest port in India. Chhatrapati Shivaji International Airport in Mumbai is the busiest airport in South Asia as per passenger volume. Maharashtra has three international airports - Mumbai's Chhatrapati Shivaji International Airport, Pune's Civil Enclave International Airport, Nagpur's Dr. Babasaheb Ambedkar International Airport. The development of a new international airport is currently underway in Navi Mumbai. The New Pune International Airport is being planned near Pune while plans are afoot for greenfield airports at Boramani (near Solapur) and Gadchiroli. Maharashtra has three major ports at Mumbai, the JNPT lying across the Mumbai harbour in Navi Mumbai, and in Ratnagiri. Additionally, there are 53 minor ports. Seven minor ports are being developed in the state will be developed by the State government with the participation of the private sector under the Maharashtra Maritime Board.

The coast of Maharashtra has been a shipbuilding centre for many centuries. There are several established ship-building companies along the coast of Maharashtra, apart from the state owned Mazagon Dock Limited at Mumbai. Mumbai is home for the world's largest film industry- Bollywood, Hindi filmmaking industry. Maharashtra ranks first nationwide in

coal-based thermal electricity as well as nuclear electricity generation. Ralegan Siddhi is a village in Ahmednagar District that is considered a model of environmental conservation.

An international cargo hub (Multi-modal International Cargo Hub and Airport at Nagpur, (MIHAN) is being developed at Nagpur. Project will also include plans for a Special Economic Zone for information technology companies. This will be the biggest development project in India so far. The IT and automobile industry has flourished in and around Pune. Navi Mumbai is the biggest planned city development project in the world and is a crucial factor for the growth of industry not only in Maharashtra, but India as well. Maharashtra has good human resource development infrastructure in terms of educational institutions—301 engineering/diploma colleges, 616 industrial training institutes and more than 24 universities with a turnout of 160,000 technocrats every year.

In this background of a well-connected transport network, a strong financial sector, stable educational infrastructure and pro-active government involvement in development, Maharashtra has become a hot-spot for business establishment and development on the international market. The government is eager to this growth of the state forwards. The government has come up with well-thought development schemes and has established several corporations for implementing its development schemes at various levels. It has also been very open to the private sector being involved in the development processes. The state recognizes that there is still a great scope for the growth of Maharashtra and continues its process of development.²¹

Economic Growth

Government of India has set an ambitious targets of double-digit growth for consecutive years and has been largely successful at it. Maharashtra has been a major contributor to the overall progress and has been a preferred investment destination for domestic and foreign companies in India due to its enabling infrastructure, availability of skilled manpower and socio-economic development. The total investment in Maharashtra has seen a three-fold increase primarily attributed due to its several development projects.

The state has realized growth by implementing policies and reviewing for a period of 5 years, called 5-year-plans. The state experienced an 8.9% per year growth during the Eighth

²¹ <http://en.wikipedia.org/wiki/Maharashtra>

Plan(1992-97), but a lacklustre 4.7% per year in the Ninth Plan(1997-2002), and again recuperated to 8.5% per year in the Tenth Plan(2002-2007) and continued to 8.6% per year for the Eleventh Plan(2007-2012). A target of a 9.1% per year was planned for the Eleventh Plan, but was affected due to the impact of economic slowdown and erratic climatic conditions impacting the agriculture in the state. The Twelfth Plan(2012-2017) has been initiated with a growth target of 10.5% per year. Besides, the official government figures, the unorganized sector also fuels development and has been a major contributor, but cannot be determined in statistics. (Federation of Indian Chambers of Commerce and Industry 2012)

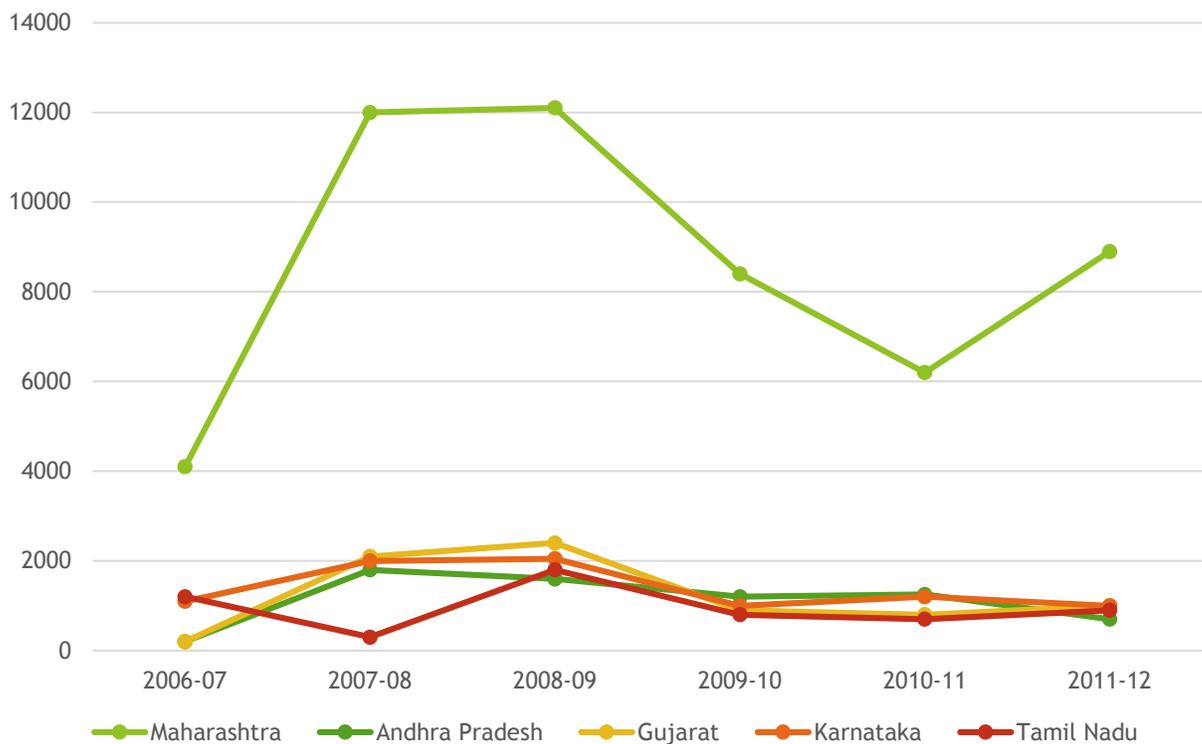


Figure 11-2: Foreign investments into Maharashtra²²

With increasing globalization, the impetus is on setting up and running manufacturing facilities which are cost competitive. There is also an increased focus on the growth of IT industry. For the state to maintain its leading position in industrial investment the State Government will look to leverage its strengths in attracting mega investments. Incentives

²² http://planningcommission.nic.in/plans/stateplan/index.php?state=sp_sdrmaha.htm

provided to under-developed regions and under-developed sectors ensure all inclusive and wholesome growth. ²³

Development Policies

During the Eleventh Plan period the State attracted 4630 projects with a total investment of more than Rs. 6,50,000 crores and employment potential of above 22 lakhs. Also, Maharashtra attracted the highest Foreign Direct Investment in the country, with 480 proposals having Foreign Direct Investment of nearly Rs. 38,000 crores, which is 23 % of the total FDI in the country. This was largely driven by the established reputation of the region and several developmental policies implemented by the administration. ²⁴

The main products exported from the State are Gems & Jewellery, Software, Textiles, Readymade Garments, Cotton Yarn, Made-up Fabrics, Metal and Metal products, Agro-based products and Plastic items. The exports from the State constitute 27% of the total exports from the country. Maharashtra has declared IT and IT enabled services policies 2003 & 2009, which have helped in development of IT industries in the State. The State's export in IT sector has grown eight fold times since 2003. In addition to Pune & Mumbai, Nagpur, Nashik and Aurangabad are emerging as new centres for IT industries in the State. The State has 33% share of Bio-technology industries in the country. (Deloitte 2013)

To keep Maharashtra amongst the preferred business destinations for global investors has taken further initiatives in its policy framework and 5 year plans. Some of the policies in action for the current 5 year plan are:

Industrial Policy

The Industrial Policy will be valid till March 31st, 2018. The targets of the Industrial Policy are

- To achieve manufacturing growth sector rate of 12-13% per annum.
- To achieve manufacturing sector share of 28% of state GDP.
- To create new jobs for 2 million persons.
- To attract investment of Rs. 5 lakh crores.

The proposed strategy for reaching its economic growth targets is:

- Continue to encourage mega investment.

²³ <http://planningcommission.nic.in/plans/planrel/57ndc/cmcpeech/maharashtra.pdf>

²⁴ Speech Of Sh. Prithviraj Chavan, Hon'ble Chief Minister, Maharashtra At The 57th Meeting Of National Development Council On 27th December, 2012

- Make land available for industrial development.
- Improve industrial infrastructure throughout the state.
- Increase investment flow to industrially underdeveloped regions.
- Improve investor facilitation and ease of doing business.
- Develop skilled manpower.

Development of industrial Corridors along Major Transport Routes

There is a strategy to develop the Delhi-Mumbai Industrial Corridor. Alongside, there will be parallel schemes for the growth of secondary corridors like:

- Mumbai-Nashik-Aurangabad-Amravati-Nagpur
- Mumbai-Pune-Satara-Sangli-Solapur
- Mumbai-Ratnagiri-Sindhurg

The mainland near Mumbai is likely to see the impacts of several development policies.

Special Economic Zones

Maharashtra already has the highest number of approved SEZs. 17 SEZs are already operational and 39 are under implementation. The government has started providing incentives to ensure quicker execution.

Development of Exhibition-cum-Convention Centres

EcC centres are being developed by various State Government authorities and local authorities, like the International Exhibition Centre at Moshi. EcC center at Shendra Industrial Area and Commercial Complex near Ambazari Garden.

Maharashtra Industrial Development Corporation

MIDC has been incorporated for the sole objective of overlooking and promoting industrial growth in Maharashtra. It shall try to procure extra land in places where the pre-existing plots of MIDC are used up by more than 75%.

Reservation of MIDC Plots

In the new MIDC plots, 10% area will be reserved for the development of small and micro industries.

Investor Promotion

Several projects will be introduced for promoting investor interest in the area. The digital medium also will be used for the cause. The government will also ensure streamlining approvals processes, to make it more business-friendly.

Skill Development

The government will actively ensure that the demands of the job market for skilled professionals are met with. It has been a hindrance to the growth of the region, and will be a focused area of active policy-making and implementation.

Promoting Mega Investments

The state has benefited from large scale projects and will target to recreate the situation.

Support to micro, small and medium enterprises

The government of Maharashtra has enlarged the scope of incentives to promote micro, small and medium enterprises (MSMEs) in the state in its latest industrial policy announced for the period 2013-2018. The present policy is aimed strengthening the MSME sector to combat the impact of imported goods in the market.

Mumbai Metropolitan Region

The Mumbai Metropolitan Region (MMR) is a metropolitan area consisting of the metropolis of Mumbai and its satellite towns. It consists of seven municipal corporations and fifteen smaller municipal councils. The entire area is overseen by the Mumbai Metropolitan Region Development Authority (MMRDA), a Maharashtra State Government organisation in charge of town planning, development, transportation and housing in the region. The MMRDA was formed to address the challenges in planning and development of integrated infrastructure for the metropolitan region. The region has an area of 4,355 km² and with a population of 20,998,395, it is among the top ten most populated urban agglomerations in the world and in the next 4 decades it is projected to be the largest metropolis in the world.

Proposal for Design School at Navi-Mumbai

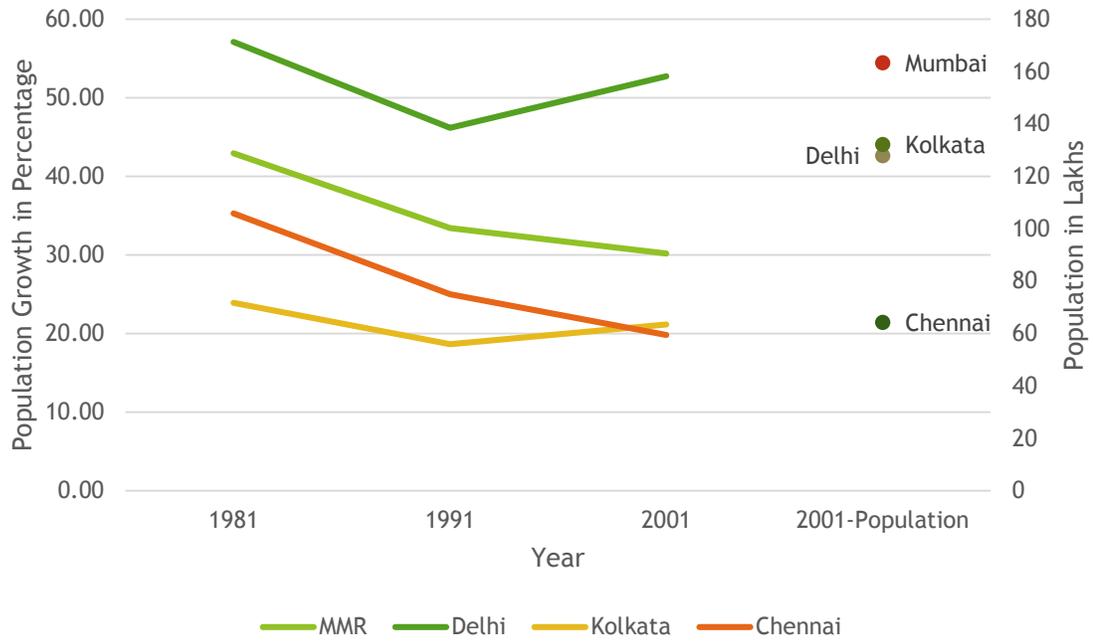


Figure 11-3: Growth of population in urban areas of India.²⁵

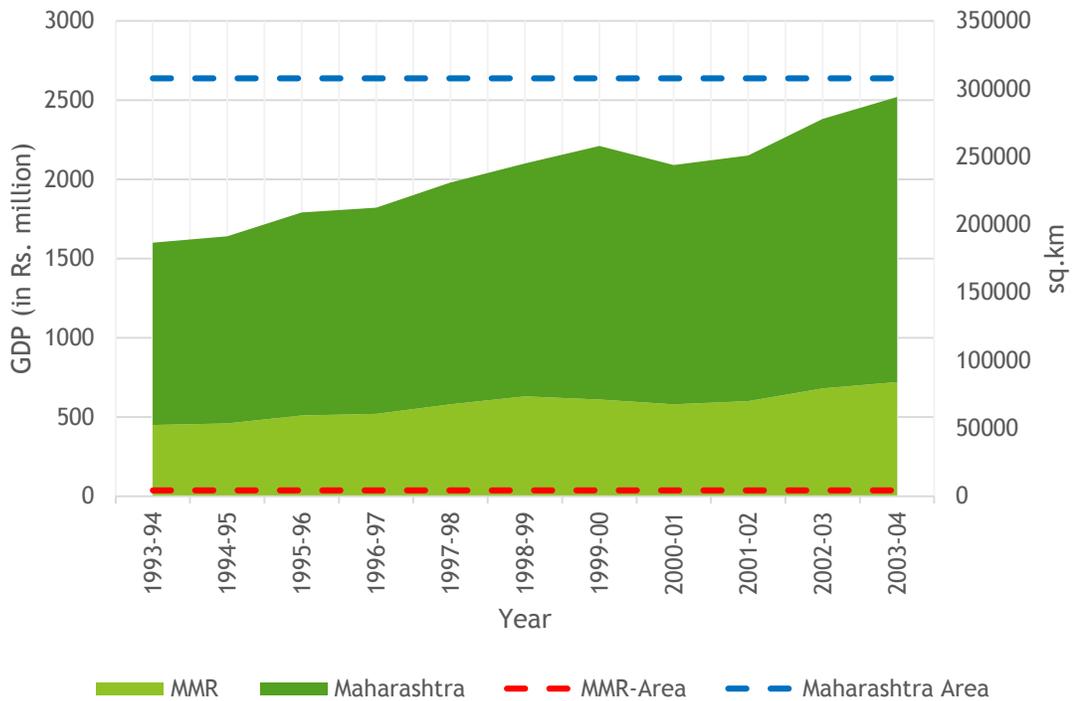


Figure 11-4: Contribution of MMR to the state.²⁵

²⁵ <http://www.visionmumbai.org/images/projects/economicgrowthofmmr.pdf>

The state has prepared several schemes and plans to develop the Mumbai Metropolitan Region as a world-class business destination. It has several plans to ensure this growth is planned and the quality of life in the region improves. The region has received a welcome response to its initiative from the vibrant business community in the city and also from an international audience due to the growth potential for businesses in India and also the region. Historically, several major metropolises like London, New York etc. have exhibited a phenomena that economic transition tends to follow a developmental progression from a heavy reliance on agriculture, toward the development of industry (e.g. automobiles, steel, textiles, etc.) and finally toward a more service based structure. This is a phenomenon being witnessed in the MMR region too.

- *London's economy contributes around 17% of the UK's total GDP and is individually larger than many major cities elsewhere in Europe. In the recent decades, contribution of manufacturing and production has declined to about 11% of London's GDP and 8% of the UK's manufacturing output. The tertiary sector is driving the city's economy with the financial and business services employing about one-third the total Greater London workforce. With more overseas company listings than any other exchange, the London Stock Exchange is the largest in the world, accounting for more than 32% of global turnover - more than the combined contribution of New York and Tokyo. The sector is concentrated in the City of London, which with around 500 foreign banks and numerous insurance and other business service companies, is rightly recognized as a dominant force on the international financial stage. London is also a major centre for European e-commerce and several other thriving industries including arts and fashion, film, media, design, law and computing. Around 85% of UK fashion designers and 70 percent of the UK film and television companies are based in London. Tourism is another important industry for London with typical yearly expenditure by tourists being in the region of £7-10bn (\$11.7 - \$16.8 billion). (icongrada IDA 2011)*
- *In Geneva, the tertiary sector employs 84% of Geneva's working population while the primary and secondary sectors employ 1% and 15% respectively. Within the tertiary sector, public administration, healthcare and business services are all-important segments but the city is known for its banking and financial services. The concentration of banking and financial institutions in Geneva is much higher than the national average and accounts for approximately 40% of the total volume of assets*

under management in Switzerland and 14% of worldwide cross border assets under management are directly or indirectly controlled from the city. (icongrada IDA 2011)

- *Dubai's GDP is divided into oil and non-oil GDP, with the latter representing the overwhelming part of Dubai GDP. The share of non-oil GDP in total GDP increased from about 90% in 2000 to about 93% in 2003. This trend is on the rise due to the increasing importance of the non-oil production in Dubai economy. During the period 1999-2003, the average share of the primary sector in Dubai total GDP was 9%, the secondary sector was 16% and the tertiary sector was 75%. Among the tertiary activities, four segments, viz., Wholesale, retail trade and repairing services; transports, storage and communication; financial services (banks, insurance, and finance) and Real estate and business services contributed more than 50% of the tertiary sector's share of the total GDP. (icongrada IDA 2011)*

Despite the potential and national importance of the region, the growth has been patchy and unorganized. The region draws its success due to the presence of the city of Mumbai at its heart and the growth of the surrounding regions has been enabled due to its proximity to the city. This has affected the city in an adverse manner also, as it has put a lot of strain on its infrastructure. The government has been trying to distribute the load on the city around its periphery by providing incentives and establishing good transport routes and systems between the city and the surrounding areas. Several measure have been taken to ensure uniform growth and has been successful in its goal, and is a continuous proposal.

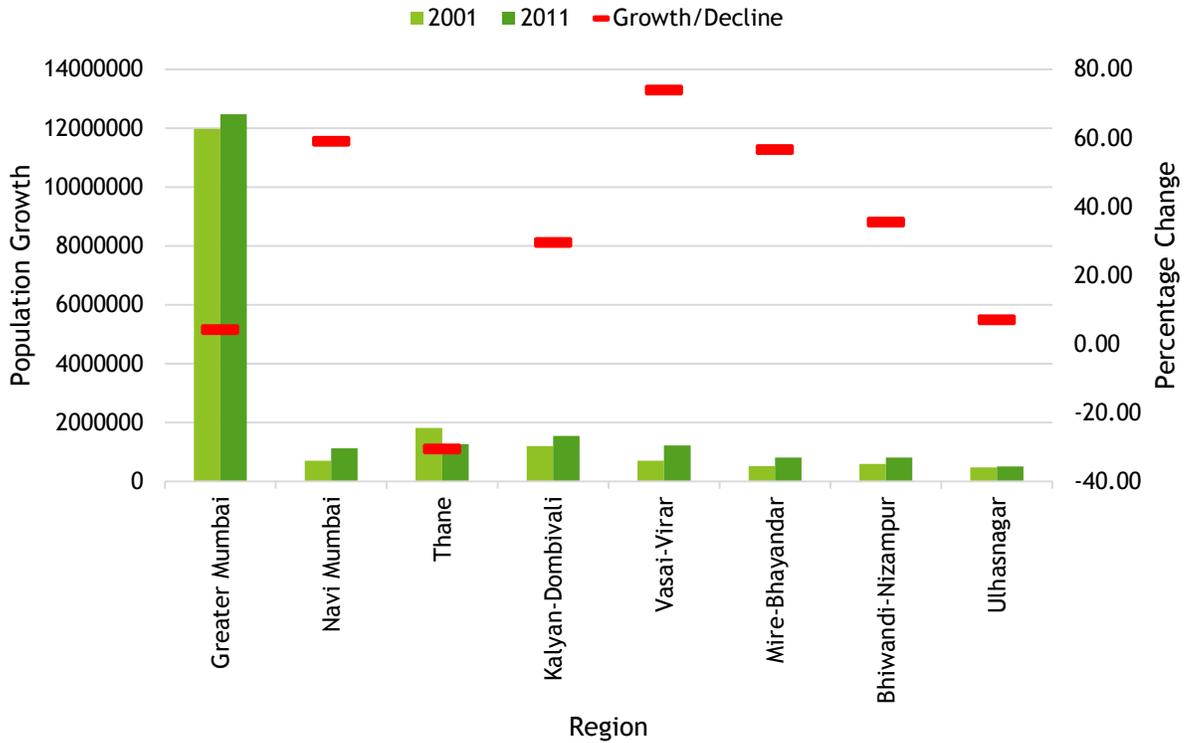


Figure 11-5: Growth of population within MMR

The government has drawn up a poly-centric plan for development with each of the areas being identified as nodes of growth. Navi Mumbai is an important node in this scheme and has a strong infrastructural framework already setup. Navi Mumbai, located in the eastern trans-harbour of Mumbai and is one of the world's largest planned townships. The government has sought to relocate some of the businesses from the island city to this area, as it is the closest to the city, with a well-drawn infrastructure plan. The Navi Mumbai project area spread over approx. 343.7 sq.kms and has a 150 km creek line. There are 14 well-planned nodes, planned along mass transport corridors - Airoli, Ghansoli, Kopar Khairane, Vashi, Sanpada, Nerul, CBD Belapur, Kharghar, Kamothe, Kalamboli, New Panvel, Ulwe, Dronagiri and Pushpak. The Navi Mumbai Municipal Corporation is responsible for the administration of the area, but CIDCO, as a planning authority, has rights on the open plots.

Navi Mumbai offers several potential advantages and can leverage this potential for growth. To evolve as an economic centre the region can capitalize on the several flourishing industries in and around the area, It has a great advantage in its close proximity to several important nodes like the JNPT port, the new international airport etc. Navi Mumbai stands

to gain directly from the spill over effect from Mumbai, and with proper planned growth may even overtake the original city. The government is also keen to average the load on Mumbai city and has taken several measure to promote Navi Mumbai. The upcoming international airport in Navi Mumbai will give a boost to the activities in the city.

11.2 LACK OF DESIGN SCHOOL IN THE LOCALITY

The growth of India in the recent years has been beneficial to the common public and has given employment, improved quality of life and social security to millions. A direct relation is seen between the economic growth and opportunity creation in the job sector. This has been further strengthened by observing the fact that the chief nodes of growth in the nation have witnessed huge population growth due to migration, as people started settling in these places for their respective jobs or the prospects for it. The local administration in the urban areas have also sought to improve the standard of living for the local populations, and have undertaken projects to improvise education, healthcare etc. and have meet with a pompous response from the locals.

The growth of urban areas have also seen a parallel growth in higher education in these areas. It has been a phenomena witnessed throughout the country. Private institutions have been at the forefront in this sector and several have seen establish an identity for themselves on a national level. Delhi and its surrounding areas have seen the establishment of huge campuses imparting education in various disciplines. Pune has become the education capital of India, with top-quality education provided by the institutions. Chennai has also seen the growth of education campuses. Several new cities have cropped up as education destinations, with the institutes themselves driving a major portion of the local economy. (Maharashtra 2014)

The government interest to develop as a major city for the country and the resultant industrial and economic activity in the area, presents a case where educational infrastructure may assist the growth of industries. The region has continuously emerged as one of the top investment destinations not just in India, but the whole of Asia. The area also benefits from its close proximity to Mumbai and the Nhava-Sheva Port. The Maharashtra government is eager to improve the educational infrastructure in the region, in anticipation of the growth in industrial and economic activity in the area. State has already submitted willingness for the establishment of Indian Institute of Information Technology under Public Private Partnership mode along Mumbai-Pune corridor and is in the process of finalizing eligible private partner. Government of India is requested to approve two IIITs for Maharashtra. Government of India is implementing Technical Education Quality Improvement Program (TEQIP) by taking a soft loan from International Development Association. The project is aimed at achieving, excellence in Engineering Colleges for making the system more demand driven, quality conscious and responsive to rapid economic and technological changes

occurring both at national and international levels. To encourage applications of Science and Technology, the State Government has set up Rajiv Gandhi Science and Technology Commission. The Commission has supported a number of projects at the research institutions and hopes to further strengthen this activity during the Twelfth Plan. There is a keen interest to set up technology incubators, facilities in interdisciplinary areas like bio-medical engineering, conservation of genetic resources, food parks and undertake technology missions of relevance to the State.

The state has sought to actively develop educational institutions in the region to improve the quality of the local workforce. As a result, Navi Mumbai has seen the establishment of several management, engineering, finance and medical schools opening up in the area in recent years. However, design education in this region has been short of coming. A look at the number of design institutes in the recently grown urban areas shows that for design education has been at a back foot in the Navi Mumbai Region. Design education has been justified has a core member in the driving force for any region or nation. One of the major reasons for this has been the lack of knowledge amongst the people about career in design. However, with active interest to improve the situation and the changing market situation, this scenario is likely to change and design education can move to be a core education faculty. Design activity is concentrated in Mumbai, which severely lacks proper space and infrastructure. In such a situation, Navi Mumbai may develop as a design hub. The area also has a good infrastructural setup and the population of the place is growing steadily.

With the establishment of Navi Mumbai as a hub for business and its yet untapped potential and high population, Navi Mumbai is a prime location for establishing a thriving design school. The planned growth strategy for Mumbai has also maintained space for development of various institutes and infrastructural facilities. A look at the land in Navi Mumbai used for educational purposes shows a concentration of engineering colleges. Navi Mumbai currently has 3 Medical, 5 Engineering, 2 Architectural, 2 Management and 1 Pharmacy and 1 Design College with a total of 51, The National Institute of Fashion Design is one exception and has seen steady growth.

11.3 INTRODUCTION TO AIROLI

Airoli is the fifth most developed housing suburb of Navi Mumbai due to its connectivity to Thane and Vashi. It is connected to Navi Mumbai's most developed neighbourhoods, Vashi and Nerul with city bus and local train services. One can reach Thane from Airoli in 8 minutes by train and from Mulund in 30 minutes by city bus.

The Mulund-Airoli Bridge has contributed to Airoli's rapid expansion in recent years, as Mulund is Mumbai's busiest suburb; this bridge and the recently started train service from Thane have made Airoli more accessible. The bridge also serves as a connection between Airoli and the Nahur station of the Central Railway

Airoli has two main residential areas, Airoli and Diva Village. The rest of the area was developed by CIDCO (City Industrial Development Corporation) and later on handed over to NMMC (Navi Mumbai Municipal Corporation) for administration. Airoli is divided into 28 sectors, out of which 20 sectors have been developed.

Mindspace, Airoli - IT SEZ

Mindspace, an IT SEZ (Information Technology - Special Economic Zone) is located close to Airoli railway station on the Thane-Belapur road. It is a well-planned IT SEZ of 4 million sq. ft. or close to 50 acres is designed for IT / ITES / BPO companies. The ultramodern business park has aesthetically planned work areas and large and efficient floor plates. The buildings are designed around a central arc and interconnected with 4 lane internal roads.

iGate Park

iGate Computer Systems Ltd has a 'knowledge park' in Airoli. Its design combines the open ambiance of a academic campus with the professional efficiency of a technology / knowledge park.

Banks in Airoli

- Union Bank of India
- State Bank of Travancore
- Bank of India
- Corporation Bank
- State Bank of India (Sector 7)
- Bank of Baroda
- The Federal Bank (Opening shortly, Sector 7)
- HDFC
- ICICI
- IDBI

- Punjab and Maharashtra Co Op. Bank (PMC Bank)
- The Mahanagar co. op. bank ltd
- Abhyudaya Co. op. Bank
- Ahmednagar Sahakari Bank
- Parsik Janata Sahakari Bank
- The Thane Janata Sahakari Bank

Schools in Airoli

- New Horizon Scholars School, Sector 13, (CBSE)
- Dhyandeep Vidya Mandir (SSC), Sector 2.
- Smt Radhikabai Meghe Vidyalaya (SSC)
- Saraswati Vidyalaya (SSC)
- Shreeram Vidyalaya and Junior College of Science, Sector 3(SSC)
- Mahatma Gandhi Hindi High School (SSC), Sector 1
- DAV Public School, Sector 10 (CBSE)
- Maziuddin High School, Sector 8A (SSC)
- St Xavier High School, Sector 6 (SSC)
- Euro School, Sector 19 (ICSE)
- VPM's International School, Sector 19 (ICSE)
- New Horizon Public School, Sector 19
- Neo Kids, Sector 13
- Euro School

Colleges

- Smt Radhikabai Meghe High School (Junior College - VOCATIONAL & COMMERCE) (Sector-16)
- mazidun high school sector 8a airoli
- Saraswati Vidyalaya (Junior College - SCIENCE)(Sector-5)
- Shreeram Vidyalaya (Junior College - SCIENCE)(Sector-3)
- Datta Meghe College of Engineering (Sector-3)
- Shreeram Polytechnic, Airoli (Sector-3)
- New Horizon School of Management (Sector 3 & Sector 14)
- Mehta College (MS, BCOM, BSCIT, BMS, etc.)(Sector-19)
- DAV Junior College (Sector-10)
- SDV junior college (sector-4)

Transport

Rail Transport:

Airoli is the First Railway Station (5.79 km) away from Thane Railway Station on Thane - Turbhe - Nerul/Vashi Line. The Railway Station is located in Sector - 3 of Airoli Node abutting the Thane-Belapur road. It is designed to cater to passenger traffic demand originating from Thane-Belapur industrial zone, on the east side and residential and commercial zone of Airoli on the west. Airoli Station is transition station between Mumbai and Navi Mumbai. There are 5 platforms (1 at each end + 1 & 1/2 island platforms

constructed) with a length of 210 meters. The platforms would be extended by 60 meters in future. There are two commuter and one light motor vehicle subway. There is a train every 15 minutes for Thane or Vashi from Airoli Station.

Bus Transport

Airoli is well connected by BEST buses. One can reach Mulund / Nahur and Navi Mumbai using BEST bus service. Buses with AS (AC Super) prefixed to their route numbers are air-conditioned (AC) buses. NMMT buses run between Airoli and other parts of Navi Mumbai, Mumbai and Thane.

BEST / NMMT	NO.	ROUTE	NOTES / VIA
BEST	500	Airoli Bus Station to Vikhroli Depot	Airoli Bridge, Nahur Stn (W), Bhandup Village (W), Cipla
BEST	501	Airoli to Kurla Station (E)	Kopar Khairane, Juhu Nagar, Vashi Bridge, Chembur Colony
BEST	509	Millennium Business Park (Mahape) to Maheshwari Udyan	Airoli Bridge, Nahur Stn (E), Bhandup Stn (E), Vikhroli Police Stn, Amar Mahal, Sion
BEST	512	Mulund Station (W) to Nerul	Nerul Bus Stn, Turbhe Naka, APM Complex, Juhu Nagar, Kopar Khairane, Airoli Bridge, Fortis Hosp, Nirmal Life Style, M.P.Chk
BEST	513	Gavanpada, Mulund (E) to Vashi Railway Station	Jui Nagar, Kopar Khairane, Airoli Bridge, Navghar Road
BEST	514	Millennium Business Park (Mahape) to Mulund (W)	Nirmal Life Style, Fortis Hosp, Airoli Bridge, Mhape Naka
BEST	520	Airoli Depot to Shivaji Park	Kopar Khairane, Jui Nagar, Vashi Brdige, Deonar Depot, Sion, Dadar T.T. - Shivaji Park
BEST	522	Vashi to Marol Depot	Juhu Nagar, Kopar Khairane, Airoli Bridge, LBS Marg, Powai, Seepz
BEST	523	Vashi to Dindoshi	Vashi Market, Juhu Nagar, Kopar Khairane, Airoli Bridge, LBS Marg, Poway, Seepz, Jay Coach
BEST	525	Vashi to Dindoshi	Mhape Naka, Airoli Bridge, Kanjur Village (E), Powai, Seepz, Jay Coach
BEST	545	Airoli to Andheri Station (E)	Airoli Bus Stn, Airoli Bridge, Nahur Stn (E), Bhandup Stn (E), Powai, Seepz, Chakala
BEST	AS 512	Nerul to Mulund (W)	AC Bus - Airoli Bridge
BEST	AS 525	Vashi to Dindoshi	AC Bus - Mhape Naka, Airoli Bridge, Kanjur Village (E), Powai, Seepz, Jay Coach
BEST	AS 551	APMC Vashi to Marol Depot	AC Bus - LBS Marg, Powai, Seepz

Proposal for Design School at Navi-Mumbai

BEST	C 43	Mumbra Station to Rani Laxmibai Chowk	Express Bus - Reti Bunder, Kalwa Bridge, Vitava, Airoli Stn (E), Airoli Sector-4, Airoli Sector-5, Airoli Bridge, Kanjur Village (E), Amar Mahal
NMMT	2	Airoli to Thane	Thane-Belapur Road
NMMT	7	Airoli to Vashi Railway Station	Ghansoli
NMMT	24	Airoli to New Panvel	
NMMT	26	Thane to Kharghar	Airoli Bus Station, Airoli Sector-4, Airoli Sector-5, Ghansoli, Turbhe, Nerul (LP), Kharghar
NMMT	17	Airoli Sector 10 to Brahmand (Thane)	Thane Belapur Road, Ghodbunder Road
NMMT	100	Vashi Railway Station - Gavanpada, Mulund (E)	Airoli Bridge
NMMT	123	Kharghar to Borivali Station (E)	AC Volvo Bus - Airoli Bridge, LBS Marg, IIT Powai, L&T Signal, Seepz
NMMT	112	Sanpada to Mulund Check Naka	

Taxis

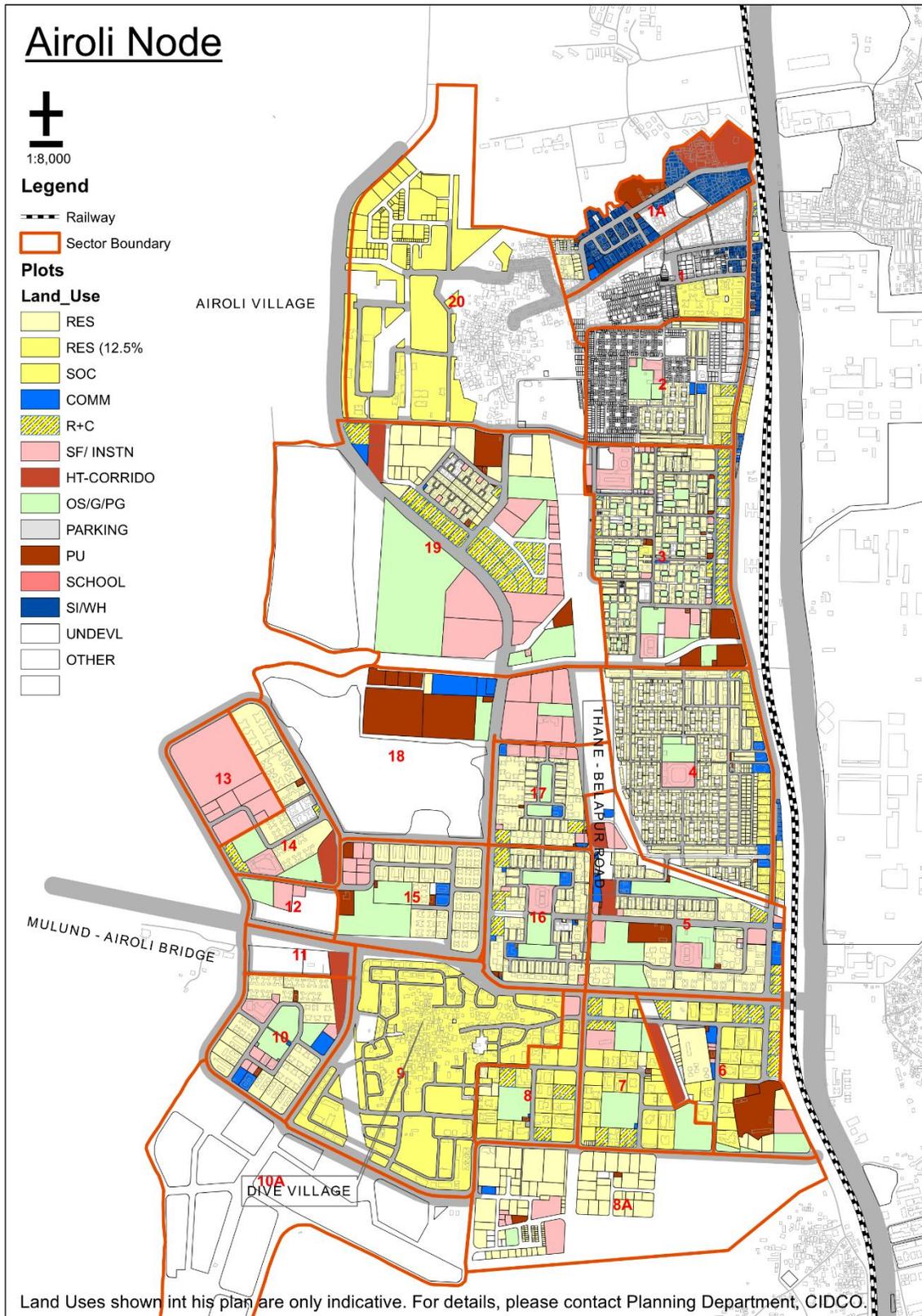
Commercial taxis with yellow number plates, ferry passengers on their way to Mumbai. They pick up passengers from Sector 5, 8 and 10 bus stops. Transport facilities in Airoli have become safer with the active participation of local police in it.

Access:

BEST bus number 512 runs from Mulund to Nerul with intervals of 20 minutes. The NMMT AC Volvo 123 is the only bus you can get after 9PM from Powai / SEEPZ / Borivli. The best way to reach Airoli after 9PM is to take any bus going towards Mulund and get down at Bhandup Sonapur Junction (near Nirmal Lifestyle) and take bus 512/514/523/123 or private vehicles going towards Airoli. You can also reach Airoli toll bridge by Auto and change auto from there to your destination in Airoli or Navi Mumbai.

Auto and Taxi: Autos and taxis are available at Airoli toll bridge for Navi Mumbai and Mumbai. You may be at the mercy of the auto / taxi drivers if they refuse to ply to your preferred destination.

Airoli Development Plan



11.4 SITE ANALYSIS

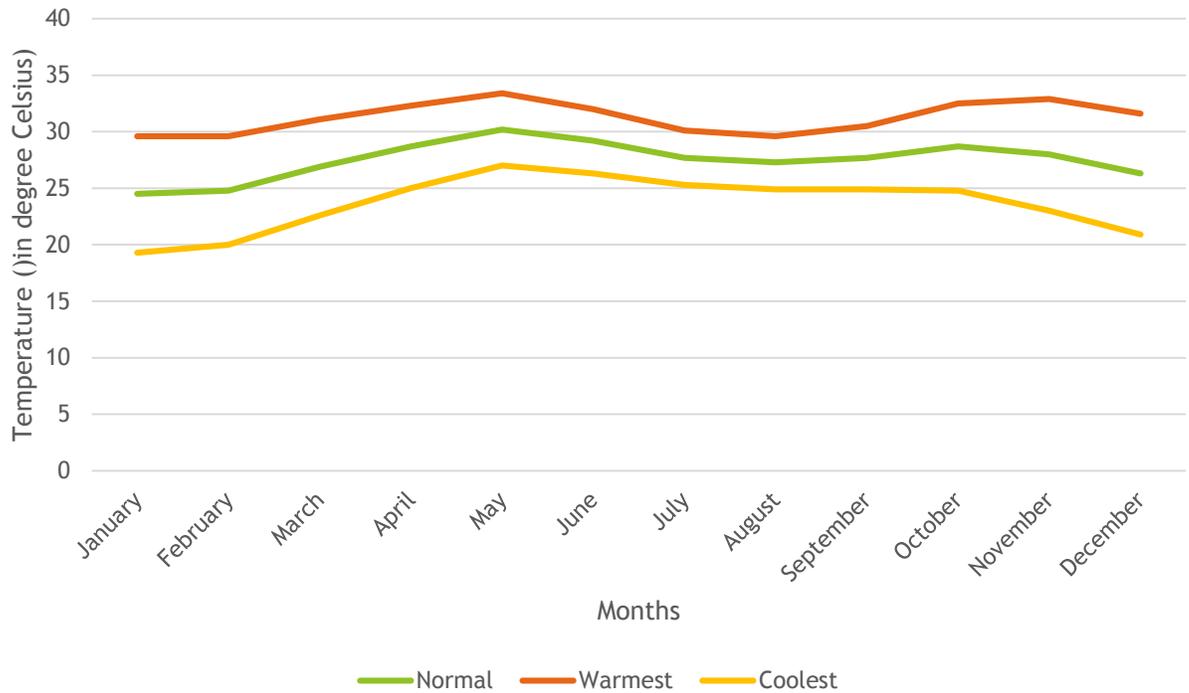


Figure 11-6: Average temperatures recorded for Airoli (1961-1990)

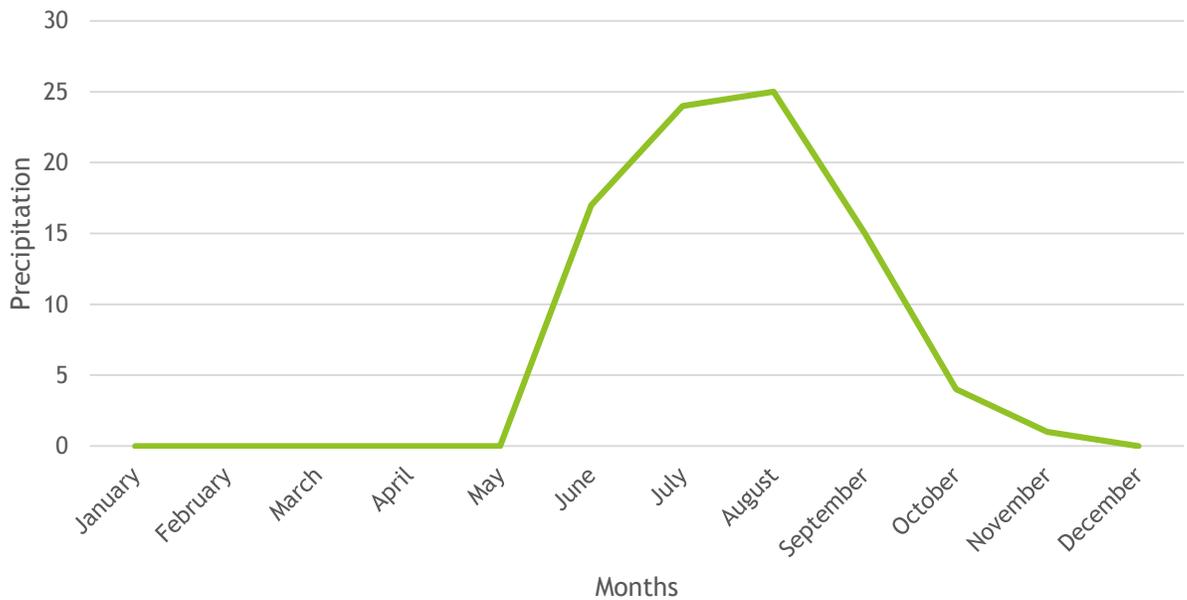


Figure 11-7 Average precipitation recorded for Airoli (1961-1990)

Site Photos



Figure 11-8: Aerial View of the site.

11.5 ESTIMATED REQUIREMENTS OF DESIGNERS

Design as a career is catching on with the young. Savvy with computers, an essential tool in today's design world, and with one of the world's biggest markets at their doorstep, it's no wonder career choices have extended from graphic and textile design to designing furniture, product, lighting, buildings and industrial design. The growing Indian market now demands better services and products designed with Indians in mind. There has been a growth in the demands in the design market, but has been stifled from a shortage of supply due to lack of local professionals trained in the field. The industries are facing severe shortage and has been repeatedly expressed by them. Till now a solution was present where in the design jobs could be outsourced, but the businesses have realized that a product or service designed in India, by Indians has a competitive edge in the market as they are better able to understand the local market than the professionals sitting in offices outside India. Moreover, even international companies chose to open their design centres in India, as it proves more cost-effective for them. While some studies show that India has a large pool of designers, others point out that India's own demand for these skills will rise and the country will face skill shortages. The domestic market will also face competition from other market, where the working population is ageing, and the pay scale is higher. None of the studies contradict the fact that India's young population, if provided the right education and training, can complement the skill requirements of the domestic economy. (Confederation of Indian Industry n.d.)

A shortage of design professionals will also hamper the growth of country. Various industrial sectors have witnessed tremendous growth in the recent years and are projected to continue doing so. These sectors employ designers in some of the core activities of their business and their businesses also heavily depend on quality designers. A brief outlook of some of these sectors are:

Animation

The industry was poised to grow to Rs. 4375 crores in 2013, rising 23% in 3 years. The education sector still lagging needs to grow by 40% to service the industry. The industry currently has 70% of its income from overseas project. More domestic projects are in the pipeline, with the booming Indian film and media industry. The sector was projected to employ up to 3.5 lakh people by 2011.

Interaction Design

With the increasing proliferation of mobiles for communication and entertainment, it has spawned a new sector for design. An approximated 40 million people access the internet through mobile devices. It is at a very nascent stage and expected to be around Rs. 50 crore market employing 13.5 lakh people and growing at a rate of 9.3%. The sector considers multimedia producers, graphic designers, web designers, game designer and user experience designers as an integral part. Digital advertising also has created the demand for specialists, as it constitutes up 7% of the total advertising revenues, in the country.

Graphic Design

There is huge demand in for graphic designer as more and more channels of communication and media are turning digital. Due to the soft nature of the business, several international firms are also outsourcing their design projects to India. At present only 3500 designers are employed in the industry, where there is a requirement of about 10,000. India only contributes only 1% to the international market with a greater scope for growth.

Automobile Design

It is the industry most deprived of talent to service the industry needs. There has been a growth in automobile sales and nearly 2.2 million vehicles have been sold annually, despite the economic crisis. There is a huge demand and strong balance sheets of auto-makers to nurture talent. India is also becoming a hub for car production due to lower costs and if the international car-makers are given proper incentives and market conditions may also develop India as design hubs.

Architecture and Interior Design

Architecture has a long established footing in the Indian market. With the recent growth of cities, other architecture related services like urban design, landscape design, planning are coming into the picture. In order to improve the quality of life and resolve the urban mess, designers need to rethink and redistribute the urban environment. The urban population has grown by 28% in 2011 compared to 2001. There are 50 cities with more than 10 lakh people. India has about 5000 towns and hardly 3000 town-planners.

With the real-estate growth it has seeded the interior design sector. The real-estate market is expected to reach a size of Rs 5700 billion by 2015, from Rs. 3200 billion in 2010,

Currently a crop of approximately 1,00,000 interior designers in the formal sector service this industry.

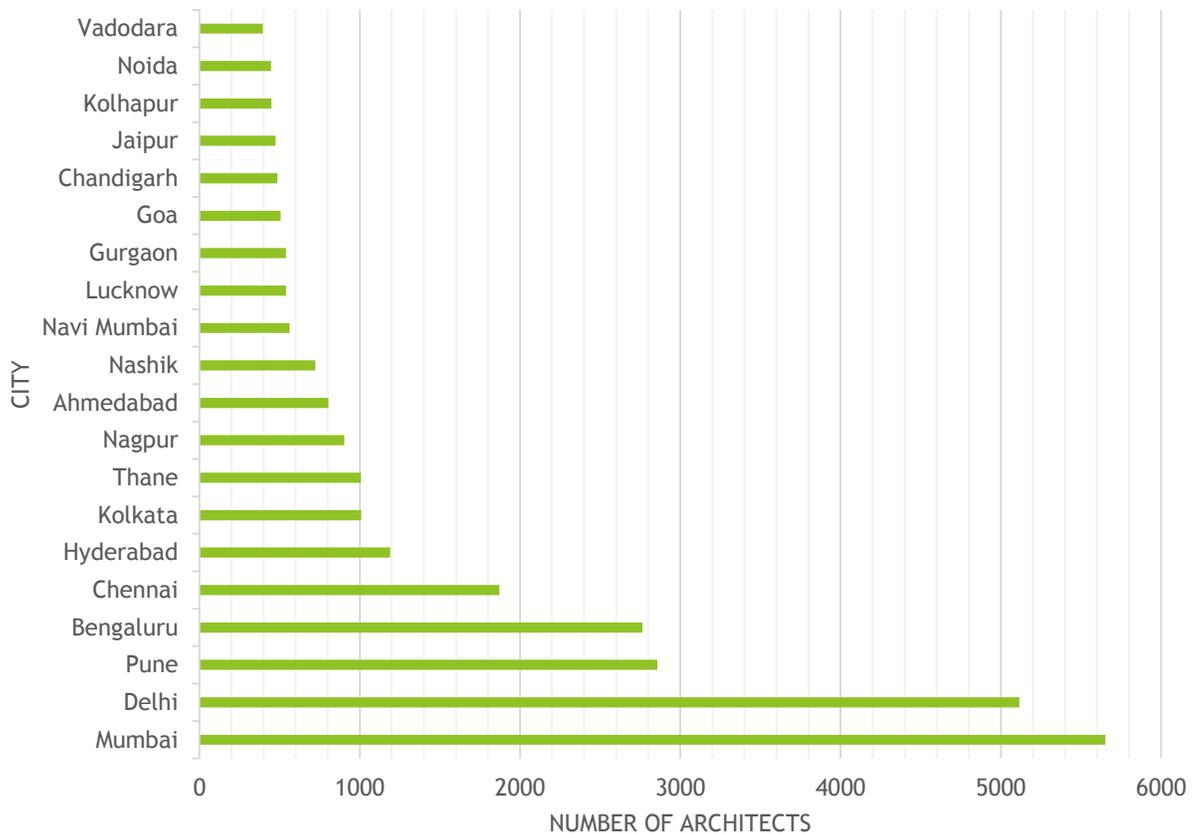


Table Error! Use the Home tab to apply 0 to the text that you want to appear here..17: City-wise distribution of architects

The city-wise distribution of architects show the high concentration of architects in Tier-I cities, especially Mumbai and Delhi. With off-site design process becoming the norm due to better communication and technologies, this gap is likely to increase.

Industrial and Furniture Design

The Indian industrial design sector is valued at approximately, Rs. 200 crore, growing at 10% annually. About 8000 designers are employed in this sector currently, with the market requirement being figured at 1,60,000 designers. Besides, Indian product design service also has a good demanded at the global level, which currently contributes only 1% internationally. More multi-national companies are also planning opening operations in India along with design departments.

Fashion and Textile Design

Fashion Design is also a well-established industry in India. The revenues in the fashion industry grew from Rs. 6.7 billion in 2008 to Rs. 12 billion in 2012. The variety in tastes of the India consumer, makes it a very diverse industry employing more designers. India's textile industry accounts for 14% of total industrial production.

Jewellery Design

India is the largest gems and jewellery market in the world worth Rs. 63,000 crores, and is growing at a rate of 13% per year.

Despite the limited size of its design culture, India has 2 institutes amongst the top design schools in the world.²⁶ The quality is not questionable, but the problem has been the quantity. China has 400 plus design schools. A mere 2 digit in number exist in India. In order, to keep abreast in the highly competitive international stage, India also needs to ensure that there is a good local supply of design professionals to the industry. The current number of design graduate coming out of India is only around 1000. The statistics have shown that India has only 2 designers for every one million population, whilst Finland has 120 designers and Japan has 90 designers to the same ratio. Therefore, the Govt. has initiated industry to concentrate in small and medium cities to encourage designers, reinstating that these cities will be the backbone for driving the country's future economy. The commerce and Industry minister, Govt. of India has to be noted stating in a recently held CII function, the need to have almost 10,000 designers in India.²⁶ There are approximately 120 institutes imparting design education, 50% of that comprises of education in architecture.

²⁶ http://issuu.com/ciidesign/docs/cii-india_design_report_2011?e=6041592/4071239#search

11.6 FACULTIES PROPOSAL

Analysing the current requirement of the market, specific departments would be instituted to promote the growth of specific sectors in the locality. With several new fields opening up and with an aim to promote those sectors, where growth has been stunted, the institute proposes to provide a firm base for basic education in several fields. For those sectors which have well-established presence in India, the institute aims to nurture trained specialists in the field and raise the quality of the sector in general. The fashion industry is a growing and highly potent market, which has a long history in India. It has been omitted from the proposal due to the presence of the highly acclaimed National Institute of Fashion Technology at Kharghar, Navi Mumbai. The NIFTs in India have a well-established presence in India, and have been pioneers of education for the Fashion industry in India. The proposal chooses to drop fashion education to focus on other sectors, with the faith that NIFT will continue to promote the growth of fashion and related activities in the region. Provisions will be made to ensure the possibility of establish a fashion design education department in the future if its need is felt.

Departments

- **Architectural Department**
 - **Architectural Design:** Architecture is concerned with the design and construction of buildings in their sociological, technical and environmental contexts. There is increasing recognition of architecture as one of the top intellectual disciplines, an art form, and a technical profession intimately linked with the single largest sector of investment in the economy. Architects are called upon to design and execute building projects and resolve other issues related to the manmade environment in a variety of settings. Bachelor of Architecture program aims at attaining a high level of contextual excellence in architectural design.
 - **Planning:** Planning, development and management of human settlements is becoming an increasingly important task. As a result of technological advancements and integration of societies and economies of the world, planning of cities and regions has become very complex. Professionally trained town and country planners are therefore needed in order to evolve new options for the development and management of human settlements. This

applies not only to the planning of metropolitan areas but also to small cities, towns and villages.

- Construction Technology: Civil engineering construction is integral for techno-industrial development. The construction includes among other buildings and related infrastructure. Quality construction is essential for the desirable functioning of the infrastructure. This leads to durable and economical infrastructure. Civil engineering courses generally include construction as a subject of the program. Historically this was relevant when development was low and slow. In contemporary development, quality and durable construction at appropriate cost is a requirement with increased emphasis on civil construction, building and related infrastructure.
- Interior Design: Interior Design defines the immediate physical environment of a human being, encompassing spiritual, philosophical, mental and emotional relationships that connect man and space. Being an intrinsic part of human endeavours towards adaptability, creativity, expression and the act of living well, it has to accommodate and provide for changing needs of the individual and the world. Its education, hence, has to equip designers to understand these global transformations.
- Urban Design: The art of city planning and urban design are closely correlated to the development of human civilization itself. The multiple dimensions of Regional and Urban Planning, and the act of individual building that constitutes Architecture, lack the clarity and cohesion of urban structure and form. Urban design is the process of designing and shaping cities, towns and villages. Whereas architecture focuses on individual buildings, urban design address the larger scale of groups of buildings, of streets and public spaces, whole neighbourhoods and districts, and entire cities, basically the shaping of masses and spaces to make urban areas functional, attractive, and sustainable.
- Landscape Design: Landscape architecture is the design of outdoor public areas, landmarks, and structures to achieve environmental, social-behavioural, or aesthetic outcomes. It involves the systematic investigation of existing social, ecological, and geological conditions and processes in the landscape, and the design of interventions that will produce the desired outcome. In the

past, landscape architects were known as designers of gardens and parks. Today landscape architects are continuing this tradition, but have also expanded the field to include planning, design and management of several aspects of the physical environment. They are also specialists in site planning, which require the expertise of an architect and also detailed technical knowledge of soils, structures and services.

- **Transport Planning:** In the context of massive urbanization of the country, transport planning in urban areas has assumed greater importance. Transport is widely and increasingly acknowledged to be one of the most critical elements that could contribute to the quality of life in urban areas. Since the country is facing resource constraints, extreme care and professional skills are required for planning, designing, operations and management of the national, regional and urban transport systems

- **Industrial Design Department**

- **Product Design:** Products are part of immediate surroundings, our living spaces and our culture. Product design is the creation of objects of utilitarian value to people. Products function as part of larger systems, and the product designer's role is constantly growing as she/her understands the larger implications of products, and the relationships with users.
- **Furniture Design:** Furniture impacts our immediate living environment breathing life and function into empty spaces. Objects around us become extensions of our bodies and directly affect the quality of life. Through sensitive design, furniture can cater to a variety of human needs such as those of the elderly, children, and the differently-abled.
- **Glass Design:** Glass is a dynamic medium with limitless possibilities and a surprising amount of impact in the worlds of art and design. Understanding the material involves developing skills in glass blowing, mold making, casting and cold working. There are numerous applications for the material like building facades, partitions, garden curtains, jewellery etc. Glass Design takes inspiration from art and craft traditions, as well as modern techniques of mass production.

- Jewellery Design: Jewellery designing, manufacturing and trading has been an integral part of the human society since five thousand years and more. It is the art or profession of creating, crafting, fabricating, or rendering designs for jewellery. Before an article of jewellery is created, design concepts are rendered followed by detailed technical drawings generated by the designer, who must be trained in the architectural and functional knowledge of fabrication techniques, composition, wearability and market trends. The market in jewellery designing and technology in India is developing rapidly.
- Ceramic Design: Ceramic Design seeks to explore and challenge the versatility of clay both as a creative and functional medium - a material that is universal and unique, sustainable and enduring, whilst also being both one of the oldest and newest technologies. Its classic characteristics can be developed into an almost infinite range of products and future contexts. Designers take their knowledge of the material into an ever increasing range of careers from ceramic practice, design practice and art practice, critical writing, commercial and broader design and cultural trend-spotting and also working with both bespoke, batch and volume production.
- **Graphics Department**
 - Film Design: Film as a medium, is closest to reality, and mirrors every aspect of the human experience. Film-making is telling a story through moving images. Film designers have one of the key creative roles in the creation of motion pictures and television. Working directly with the director and producer, they must select the settings and style to visually tell the story. India is rich in living traditions and stories, and provides a vast live laboratory for film-designers.
 - Animation design: The art of visual story-telling has been a part of human culture since the beginning of civilization. Animation is one of the many ways in which we tell our stories and communicate with one another and is a powerful medium of communication and expression. India is a player in the international framework of animation production with a newly born industry, yet unnurtured and with a potential animation culture without a substantial

animation history. It is an important time its learning and practice that is informed by an indigenous sensibility.

- **Graphic Design:** Graphic design is created to convey a specific message (or messages) to a targeted audience. Graphic designers use various methods to create and combine words, symbols, and images to create a visual representation of ideas and messages. Common uses of graphic design include identity (logos and branding), publications (magazines, newspapers and books), print advertisements, posters, billboards, website graphics and elements, signs and product packaging. Graphic Design in a developing country with its varied cultural heritage has a vital role to play in the national development.
- **Photography Design:** Everyone takes photographs, but not everyone is a photographer. It takes an artistic eye, a certain passion and well-honed technical skills to develop into a professional. Photography designers possess technical skills and experience to communicate conceptual and creative visions through the medium of photography. Photography has a rich past, and a rapidly changing future with the increase in digital photography. Areas of photo imaging work include fashion, sport, wedding, portrait, social, photojournalism, magazine and freelance, landscape and architecture, food and product and advertising.
- **Print Design:** Print design explores both traditional and experimental techniques for reproducing your own images using inks and paper. Designers must be acquainted with intaglio, lithography, screen-print, relief, and photo and digital methods. The designers are employed in the world of print publishing as printers, publishers and project coordinators but also influence other areas beyond printmaking such as graphic and digital design.
- **New Media:** New media refers to on-demand access to content anytime, anywhere, on any digital device, as well as interactive user feedback, creative participation. Another aspect of new media is the real-time generation of new, unregulated content. We are surrounded by mediums, from the traditional mediums of print, to newer digital ones. The media around us is our highway of information and knowledge. New Media Design aims at understanding these media, and how they impact us, to create better design solutions. New media

does not include television programs, feature films, magazines, books, or paper-based publications - unless they contain technologies that enable digital interactivity.

- Interface Design: This is the Information Age and one of the huge challenges facing us is the massive amount of information confronting every individual, from a wide range of sources. Filtering, organising, and representing this information, so it is easily available to the people who need it the most, is part of Interface Design. Designers are required with good analytical abilities, skilled with specific techniques, creative in their solutions, sensitive in their approach and knowledgeable about current developments in using new emerging technologies and exploring new medias.
- **Automobile Department**
 - Automobile Design: Automobile designers combine knowledge of physics with aesthetics to create cars that appeal to the eye while being safe, energy efficient, and fun to drive. Automotive design is a competitive career that attracts many who love cars, trucks, and vans, but one which requires top-level talent to train for and then to apply for. If you have a love of motor vehicles and the desire to turn your dream automobile designs into reality on the road, here are the steps to take to become an automobile designer. With the rapid growth in the Automobile sector, indigenous development in this sector will be very beneficial for the industry.

GRAPHICS DEPARTMENT

UNDERGRADUATE COURSES

1. Film, Animation and Video Design
2. Graphic Design
3. Photography
4. Printmaking

POSTGRADUATE COURSES

1. Film and Video Design
2. Animation Design
3. Graphic Design
4. Photography
5. Information and Interface Design
6. New Media Design

DOCTORATE PROGRAMS

DESIGN CENTRES

PROVISIONS FOR SECTOR DEVELOPMENT

PRODUCTS DEPARTMENT

UNDERGRADUATE COURSES

1. Product Design
2. Glass Design
3. Jewellery Design
4. Ceramics
5. Furniture Design

POSTGRADUATE COURSES

1. Ceramic and Glass Design
2. Product Design
3. Furniture and Interior Design

DOCTORATE PROGRAMS

DESIGN CENTRES

PROVISIONS FOR SECTOR DEVELOPMENT

ARCHITECTURE DEPARTMENT

UNDERGRADUATE COURSES

1. Architectural Design
2. Planning
3. Construction Technology
4. Interior Design

POSTGRADUATE COURSES

1. Urban Design
2. Landscape Design

3. Interior and Architecture Design

4. Transport Planning

DOCTORATE PROGRAMS

PROVISIONS FOR SECTOR DEVELOPMENT

AUTOMOBILE DEPARTMENT

UNDERGRADUATE COURSES

1. Automobile Design

POSTGRADUATE COURSES

1. Transportation and Automobile Design

DOCTORATE PROGRAMS

11.7 PROGRAMS AND FACILITIES

With an intent to provide quality education in a variety of fields, the institute shall establish courses in several disciplines with small sized batches. The faculties covered represent the currently growing sectors in the Indian economy and also ones which are projected to take the growth forward. The programs shall try to provide highly specific and train education at all levels. The institute shall aim to one of the top centres for education in the world and an analysis of the courses offered by several premier educational institutes in India and at an international level was analysed. The approach to education would be modular which will facilitate better management of education in a constantly changing and dynamic atmosphere.

The institute shall also aim to be a hot-bed of design research and industry partnerships and shall try to provide physical infrastructural setup for the same. However, due to constantly changing design environments and the business set-up, these facilities are likely to witness drastic change in growth or decline, hence an approach of providing a 'blank canvas' for the institute administration is targeted, which would enable the institute administrators to utilize the facility as per their needs. The programs offered are likely to change and only indicate the scope of education provided at the institute at its establishment.

The institute shall provide basic undergraduate education in all the departments. The number of programs would be a reflection of the shortage of designers in the industry.

The postgraduate courses seeks to provide specialized education, which would build on the basic courses. It is again a reflection of the industry demand, with specialized education in certain department meant to cater to the newly generated niche markets. It will also ensure that the local talent is nurtured and find recognition within the country.

The doctorate studies would ensure the quality of the knowledge base at the institute is continually refreshed and updated. It also ensure that there is opportunity for the indigenous talents to pursue their interests within the nation and aims to reduce the migration of professionals to other countries in search of education.

Design Centres in certain departments aim to provide design services for the industry utilizing the established infrastructure of the institute. It will also act as a source of revenue of the institute and promote greater industry involvement.

The institute shall take-up the initiative for design awareness and provide facilities for other organizations and association which are involved in the same field, besides proactively undertaking the initiative itself.

11.7.1 Analysis of Courses

GRAPHICS DESIGN COURSES	
UNDER-GRAD	POST-GRAD
NID, Ahmedabad	NID, Ahmedabad
Graphic Design	Graphic Design
Film and Video Design	Film and Video Design
Animation Design	Animation Design
Exhibiton Design	Photography Design
Rhode Island School of Design, Rhode Island	Rhode Island School of Design, Rhode Island
Film/Animation/Video Design	Digital+Media
Graphic Design	Graphic Design
Illustration	Teaching + Learning in Art + Design
Photography	Printmaking
Printmaking	Photography Design
Yale University, Connecticut	Yale University, Connecticut
Graphic Design	Graphic Design
Printmaking	Photography Design
Photography	
Film/Animation/Video Design	

ARCHITECTURAL DESIGN COURSES	
UNDER-GRAD	
CEPT, Ahmedabad	SPA, Delhi
B.Arch	M.Arch(Architectural Conservation)
B.Planning	M.Arch(Urban Design)
B.Construction Technology	M.Industrial Design
B.Interior Design	M.Building Engineering & Management
	M. Landscape Architecture
SPA, Delhi	M.Planning(Environmental Planning)
B.Arch	M.Planning(Housing)

B.Planning	M.Planning(Regional Planning)
	M.Planning(Transport Planning)
Architectural Association, London	M.Planning(Urban Planning)
B.Arch	Doctorate
MIT, Masseurachusetts	Architectural Association, London
BSA(Architectural Design)	M.Arch(Architectural Conservation)
BSA(Art, Culture and Technology)	M.Arch(Architectue & Urbanism)
BSA(Building Technology)	M.Arch(Design & Make)
BSA(Design & Computation)	M.Arch(Emergent Technologies)
BSA(History, Theory and Criticism of Architecture and Art)	M.Arch(History & Critical Thinking)
BSAS	M.Arch(Housing & Urbanism)
	M.Arch(Spatial Performance & Design)
	M.Arch(Landscape Urbanism)
POST-GRAD	M.Arch(Projective Cities)
CEPT, Ahmedabad	M.Arch()
M.Arch(Urban Design)	Doctorate
M.Arch(Theory and Design)	
M.Arch(Architectural and Settlement Conservation)	MIT, Masseurachusetts
M.Arch(Sustainable Architecture)	M.Arch
M. Landscape Architecture	SM.Arch.S (Aga Khan Program for Islamic Architecture)
M. Landscape Design	SM.Arch.S (Architecture and Urbanism)
M.Planning	SM.Arch.S (Architectural Design)
M.Tech	SM.Arch.S (Building Technology)
M.Sc(Geomatics)	SM.Arch.S (Design and Computation)
M.Interior & Architecture	SM.Arch.S (History, Theory and Criticism of Architecture and Art)
Intl.M. Interior & Architecture	Master of Science in Building Technology(SMBT)
M.Habitat Management	Master of Science in Art, Culture and Technology(SMACT)
	Doctorate(Building Technology)
	Doctorate(Design and Computation)
	Doctorate(History + Theory of Architecture and Art)

INDUSTRIAL DESIGN COURSES

UNDER-GRAD

Rhode Island School of Design, Rhode Island

POST-GRAD

Rhode Island School of Design, Rhode Island

Furniture Design	Ceramics
Glass	Furniture Design
Interior Design	Glass
Ceramics	Interior Architecture
Industrial Design	Industrial Design
Jewellery Design	
	NID, Ahmedabad
NID, Ahmedabad	Ceramic & Glass Design
Ceramic	Furniture & Interior Design
Furniture & Interior Design	Product Design
Product Design	Toy & Game Design
Arts Centre College, California	Arts Centre College, California
Environmental Design	Environmental Design
Product Design	Industrial Design
IIT-Industrial Design Centre, Mumbai	IIT-Industrial Design Centre, Mumbai
Industrial Design	Industrial Design
MIT, Masseurhusses	
Glass	
Ceramics	
Industrial Design	
Jewellery Design	

AUTOMOBILE DESIGN COURSES	
UNDER-GRAD	POST-GRAD
DYPDC, Pune	DYPDC, Pune
Automobile Design	Automobile Design
Art Centre College of Design, California	NID, Ahmedabad
Transportation Design	Transportation & Automobile Design
	Art Centre College of Design, California
	Transportation Design

11.7.2 Incubation Cells

Startup incubation holds significant importance in a country like India where entrepreneurs are launching new setups and changing the game of business by minutes. Incubation programs or centers provide support functions, mentorship and resources to individual entrepreneurs or entrepreneurial setups. This enables them to get all the expert advice and technical guidance that they need to survive for a longer time. It plays the crucial bridge in facilitating the conversion of research activity into entrepreneurial ventures. This has a double benefit of introducing novel ideas and new products to the market for consumption by people. At the outset an incubation cell can be said to be advantageous due to the following reasons:

- Creating jobs and wealth
- Fostering a community's entrepreneurial climate
- Technology commercialization
- Diversifying local economies
- Building or accelerating growth of local industry clusters
- Business creation and retention
- Encouraging women or minority entrepreneurship
- Identifying potential spin-in or spin-out business opportunities
- Community revitalization

Most design school in India run an incubation cell on some level and scale. There are also several independent private entities that do the same job. India has recently witnessed the growth of such cells, and have been very successful. Bangalore has developed as a center for innovation and has spear-headed the movement. Several top educational institutions and bodies also run incubation cells. The institutes range from design schools to fields of technical education to business schools. Some of the functioning large-scale incubation cells are mentioned below.

Innovation and Entrepreneurship (SINE), IIT Mumbai

Established in 2004, SINE can incubate an average of 15 companies at a time and has an infrastructure spread over 10,000 sqft. However, they still haven't opened up to external business incubation.

Technopark Technology Business Incubator (T-TBI), Kerala

Established in 2006 with the support of the Government of Kerala, T-TBI offers fully furnished working spaces spread over 15,000 sqft, expert opinions and guidance from the industry, marketing and legal management consultancy and financial assistance. T-TBI has till date successfully incubated about 60 companies.

Indian Angel Network (IAN)

IAN is an equity based business incubator centre that gives priority to ventures in several areas. It has been established with the support of the National Science & Technology Entrepreneurship Development Board and the Department of Science & Technology of the Government of India. IAN incubator helps start-ups to secure funding through its tie-ups with associations. The IAN also has strategic alliances with other incubators, corporate, R&D labs and many industry associations.

Centre for Innovation, Incubation and Entrepreneurship (CIIE), IIM Ahmedabad

CIIE has incubated more than 50 companies, only a handful of which were owned by IIM students. CIIE has been incubating businesses in the areas of internet and mobile technology, clean technology, social sector start-ups and healthcare.

AngelPrime

AngelPrime was launched recently in 2011 in Bengaluru by well-known names in the Indian tech industry. AngelPrime believes in incubating their ventures at their office space so that they can be closely monitored.

Startup Village, Kochi

Startup Village is a not-for-profit business incubator based in Kochi, Kerala. Started in April 2012, the organisation's aim is to launch 1,000 technology start-ups over the next 10 years and start the search for the next billion-dollar Indian company. It focusses primarily on student start-ups and telecom innovation. It is India's first incubator that is funded jointly by the public and private sector.

Some of the services provided by the incubation cells are:

- Help with business basics
- Networking activities
- Marketing assistance
- High-speed Internet access
- Help with accounting/financial management
- Access to bank loans, loan funds and guarantee programs
- Help with presentation skills

Proposal for Design School at Navi-Mumbai

- Links to higher education resources
- Links to strategic partners
- Access to angel investors or venture capital
- Comprehensive business training programs
- Advisory boards and mentors
- Management team identification
- Help with business etiquette
- Technology commercialization assistance
- Help with regulatory compliance
- Intellectual property management

11.8 INSTITUTE CAPACITY PROPOSAL

The growth of a design institute is inorganic, where the courses offered and the number of students in various department keep changing. A look at the time-line of the growth of some institutes help us decide that the growth pattern of a design institute is highly unpredictable as it has to reflect all the changes in the market, technology, finance, arts and other industries. Courses are added and maybe removed from the offerings of a design institute. With the recent advancement of technology digital mediums, graphic design has taken a taken different direction, with the conventional printing processes taking a back seat, and new methods in the digital space gaining importance. It has also spurred several new and associated fields of study. A small batch size ensure flexibility for the management to organize the classes, spaces and iterations to the course of study. As stated previously, the course structure of a design institute is never final. The proposition made here is in preparation of the courses which will be offered at the beginning of the functioning of the institute, and suitable provisions can be made to improvise later.

A small batch size is also preferred for imparting design education as there is a better student to teacher interaction, which is very essential in design education. Also, the nature of education is such that students do not need constant supervision and interaction with teachers. The student-teacher interaction happens for small periods of time inter-spaced with time when the student is working on his own and the teacher may be free to do other activities. This period of student teacher interaction can be planned and controlled so as to optimize time and space utilization. The smaller groups also facilitate collaborative projects to be executed by a batch, and in general keeps the atmosphere bright.

The teachers fall into two categories - permanent professors and visiting professors. The permanent professors would be visiting the institute on all working days, and would require permanent spaces for their needs. Some professors may also seek to use the institute facilities for their private purposes such as meeting guests, holding meetings or making presentations. The permanent professors would be meeting the students on a daily basis and more space would be required by them for student-professor interactions. The permanent professors also need to maintain a good rapport with each other to ensure smooth functioning of the institute. The permanent professors are also often involved in research activities, and require the institute infrastructure at times. These professors are also more often required in college to answer to the students, as the learning process for the students depends on continuous guidance. Hence, a greater proportion of permanent professors to visiting

professors would be ideal. The visiting professors are professionals who are generally practicing in the field and need to visit the institutes only on specified days. They are required for their expertise on a particular topic and are accorded the status of guests when visiting the institute. They may also be involved in research work in the institute and may not be available to act as a batch-in-charge. The visiting professors do not generally require permanent space, and it would be more ideal to have common spaces for the visiting professors. The visiting professors need to co-ordinate with the permanent professors. They may also require spaces for private meetings, presentations etc. and can be shared amongst them.

Batches are assigned respective teachers-in-charge to keep a check on the progress and activities of the students. It is possible for a single professor to take the charge for two batches, since the size of the batches are small. The task of class-in-charges are restricted to management and communication, hence no special knowledge is required for any professor to assume the role of a batch-in-charge and all permanent professors may be uniformly distributed the task, within the departments. The non-teaching staff assist the functioning of the institute.

The doctoral programs are operated with great discretion and the institute may not have specific number of seats for it, and may accept or reject the proposals based on the parameters set by the department heads. The professors act as mere guides for the process. The participants often require the infrastructure of the setup to continue their work which can be shared by the whole institute. The faculty members may also be involved in research activities, and may employ assistants to help them in their scope of study.

The design centres may undertake design projects for the industry and may require their own infrastructural setup. The department will be instituted with an objective to generate revenue and also to be updated and involved about the market situations. The spaces would be separate from the educational setup, however the students may be engaged in its activities. The facility shall try to provide for several design centres within each department if required which would be regulated by the institute management. The facilities required at each centre would be similar to the setup of a design office.

Other facilities would include provisions for propagating design awareness, provide spaces for other organizations and association involved in the design field and establish an entrepreneurial atmosphere for the students in the institute. The spaces would be separate

from the educational part of the institute and be more easily accessible to the common public.

EDUCATIONAL CAPACITY

	DURATION	NO. OF SEATS PER BATCH	NO. OF BATCHES	TOTAL SEATS	TOTAL STUDENTS ENROLLED
GRAPHICS DEPARTMENT					
UNDERGRADUATE COURSES					
1. Film, Animation and Video Design	4	15	1	15	60
2. Graphic Design	4	15	1	15	60
3. Photography	4	15	1	15	60
4. Printmaking	4	15	1	15	60
TOTAL			4	60	240
POSTGRADUATE COURSES					
1. Film and Video Design	2.5	15	1	15	45
2. Graphic Design	2.5	15	1	15	45
3. Photography	2.5	15	1	15	45
4. Information and Interface Design	2.5	15	1	15	45
5. New Media Design	2.5	15	1	15	45
TOTAL			6	75	225
DEPARTMENT TOTAL			9	135	465
PRODUCTS DEPARTMENT					
UNDERGRADUATE COURSES					
1. Product Design	4	15	1	15	60
2. Glass Design	4	15	1	15	60
3. Jewellery Design	4	15	1	15	60
4. Ceramics	4	15	1	15	60
5. Furniture Design	4	15	1	15	60
TOTAL			5	75	300
POSTGRADUATE COURSES					
1. Ceramic and Glass Design	2.5	15	1	15	45
2. Product Design	2.5	15	1	15	45
3. Furniture and Interior Design	2.5	15	1	15	45
TOTAL			3	45	135
DEPARTMENT TOTAL			8	120	435

Proposal for Design School at Navi-Mumbai

ARCHITECTURE DEPARTMENT					
UNDERGRADUATE COURSES					
1. Architectural Design	5	15	1	15	75
2. Planning	5	15	1	15	75
3. Construction Technology	5	15	1	15	75
4. Interior Design	5	15	1	15	75
TOTAL			4	60	300
POSTGRADUATE COURSES					
1. Urban Design	2.5	15	1	15	45
2. Landscape Design	2.5	15	1	15	45
3. Interior and Architecture Design	2.5	15	1	15	45
TOTAL			4	45	135
DEPARTMENT TOTAL			7	105	435
AUTOMOBILE DEPARTMENT					
UNDERGRADUATE COURSES					
1. Automobile Design	3	15	3	45	135
TOTAL			3	45	135
POSTGRADUATE COURSES					
1. Transportation and Automobile Design	2	15	2	30	60
TOTAL			2	30	60
DEPARTMENT TOTAL			5	75	195
EDUCATIONAL TOTAL			29	435	1530

STAFF CAPACITY

	Total Students	STR Ratio	No. Of Faculty Members	Permanent Faculty (2:3)	Visiting Faculty (1:3)	Teaching - NonTeaching Staff Ratio (Maximum)	No. Of Non-Teaching Staff (Maximum)	Non-Teaching (Actual) - 1:2
UNDERGRADUATE COURSES								
Graphics Department	240	10	24	16	8	1:3	72	48
Architectural Department	300	10	30	20	10	1:3	90	60
Products Department	300	10	30	20	10	1:3	90	60
Automobile Department	135	10	14	9	5	1:3	42	28
POSTGRADUATE COURSES								
Graphics Department	225	10	27	18	9	1:3	81	54
Architectural Department	105	10	14	9	5	1:3	42	28
Products Department	180	10	18	12	6	1:3	54	36
Automobile Department	60	10	6	4	2	1:3	18	12
FULL INSTITUTE TOTAL								
Graphics Department	510		51	34	17		153	134
Architectural Department	435		44	29	15		132	88
Products Department	480		48	32	16		144	96
Transport Department	195		20	13	7		60	40
TOTAL			162					358

INSTITUTIONAL CAPACITY

INSTITUTIONAL AREA	No. Of Units	Capacity	Total Capacity
1. Design Cell	1	15	15
2. Incubation Centre	1	10	10
3. Legal Counsel Office	1	10	10
4. Industry Tie-Ups	1	2	2
5. Dedicated Office for Rent	3	25	75
6. Design Studios for Rent	6	12	72
7. Design Offices for Rent	16	6	96
8 Warehouse/Server for Rent	3 + 2	0	0
9. Makerspace	1	60	60
10. Auditorium	1	350	350
11. Exhibition/Working Hall	1	400	400
12. Conference Room	4	8	32
13. Board Room	2	40	80
INSTITUTIONAL TOTAL	TOTAL		1202
			1202

11.9 AREA STATEMENT

(All areas in square metres)

		Individual Unit Size(in sq.m)	Number of Units	Total Area
GRAPHICS DEPARTMENT - 31 BATCHES				
	Studios	56	15	840
	Model Making Area	112	1	112
	Sketching Area	56	2	112
	Thinking Area	28	6	168
	Open Working Area	336	1	336
	Student Rooms	28	2	56
	Project Studio	56	1	56
	Lecture Rooms	56	4	224
	Computer Area	56	4	224
	Presentation Area	56	4	224
	Crit Space	56	3	168
	Storage + Management + Access + Toilets	112	12	1,344
		TOTAL		3,864
ARCHITECTURE DEPARTMENT - 29 BATCHES				
	Studios	56	15	840
	Model Making Area	112	1	112
	Sketching Area	56	2	112
	Drafting Area	112	1	112
	Thinking Area	28	4	112
	Open Working Area	224	1	224
	Student Rooms	28	2	56
	Project Studio	56	2	112
	Lecture Rooms	56	5	280
	Computer Area	56	4	224
	Presentation Area	56	3	168
	Crit Space	56	3	168
	Storage + Management + Access + Toilets	112	12	1,344
		TOTAL		3,864
PRODUCTS DEPARTMENT - 29 BATCHES				
	Studios	56	14	784
	Model Making Area	112	2	224
	Sketching Area	56	2	112
	Drafting Area	112	1	112
	Thinking Area	28	4	112
	Open Working Area	224	1	224
	Student Rooms	28	2	56
	Project Studio	56	1	56
	Lecture Rooms	56	3	168
	Computer Area	56	4	224
	Presentation Area	56	4	224
	Crit Space	56	3	168
	Storage + Management + Access + Toilets	112	16	1,792
		TOTAL		4,256

Proposal for Design School at Navi-Mumbai

AUTOMOBILES DEPARTMENT - 13 BATCHES				
	Studios	56	7	392
	Model Making Area	56	1	56
	Sketching Area	56	1	56
	Drafting Area	112	1	112
	Open Working Area	224	1	224
	Project Studio	56	1	56
	Lecture Rooms	56	3	168
	Computer Area	56	2	112
	Presentation Area	56	2	112
	Crit Space	56	1	56
	Storage + Management + Access + Toilets	112	12	1,344
		TOTAL		2,688
COMMON FACILITIES				
	Advanced Computing Lab	56	1	56
	Digital Visualization Area	112	2	224
	Photography Studio	56	2	112
	Open Library	112	4	448
	Graphic Printing Lab	224	1	224
	Woodworking Lab	224	1	224
	Metalworking Lab	224	1	224
	Ceramics Lab	224	1	224
	Glassworking Lab	112	1	112
	Digital fabrication Lab	168	1	168
	Paint Workshop	56	1	56
	Canteen	506	1	506
	Auditorium	840	1	840
	Exhibition/Working Area	1,176	1	1,176
		TOTAL		4,594
FACULTY FACILITIES				
	Visiting Staff Lounge	56	2	112
	Faculty Common Room	112	2	224
	Research Lab	28	8	224
	Faculty Offices	28	16	448
	Working Studio	56	3	168
		TOTAL		1,176
	EDUCATIONAL TOTAL			20,442
DESIGN CELL AREAS				
	Administration Office	112	1	112
	Management Offices	28	2	56
	Design Offices	28	8	224
	Design Cell Workshop	392	1	392
	Common Working Areas	560	1	560
	Presentation/Meeting Areas	280	1	280
	Recreational Area	224	1	224
	Library	560	1	560
	Publication Cell	56	1	56
	Storage Areas	56	6	336
	Toilets + Access	56	6	336
		TOTAL		3,136

Proposal for Design School at Navi-Mumbai

START-UP CELL AREAS				
	Administation Office	28	1	28
	Incubation Cell Office	28	1	28
	Legal Counsel Office	28	1	28
	Establishment Office for Rent	28	4	112
	Offices for Rent (Small)	28	12	336
	Dedicated Office for Rent (Big)	112	3	336
	Studios for Rent	56	6	336
	Warehouse for Rent	56	3	168
	Common Working Areas	280	1	280
	Meeting Areas for Rent	28	6	168
	Server Room	112	1	112
	Makerspace	392	1	392
	Toilets + Access	56	8	448
		TOTAL		2,772
ADMINISTRATIVE AREAS				
	Front Office	112	1	112
	Reception + Display Area	448	1	448
	Security Area	112	1	112
	Human Resource Office	228	1	228
	Administartive Office	228	1	228
	Accounts Office	228	1	228
	Employee's Lounge	56	1	56
	Managers Cabins	28	4	112
	Conference Room	112	1	112
	Institute Head Cabins	28	2	56
	Toilets + Access	56	3	168
		TOTAL		1,860
	INSTITUTIONAL TOTAL			7,768
	TOTAL			28,210

11.10 INSTITUTE OBJECTIVE

The institution is aimed to be a major force in the development of Navi Mumbai as an educational hub, and would also aim to stimulate business growth in the area. Considering the shortage of design professionals in India, and in the locality, the institute would aim to supply quality trained professionals to the talent pool of the area. It shall aim to utilize the growing population of the region to train and specialize designers for the country. Design professionals from a wide range of fields would graduate from the institute and seeks to make quality designers trained in specialized fields available to the market. The focus would be on variety and quality.

The institute would also aim to be an active member in research and development activities. Anticipating an involvement of the local businesses in design activities, the institute shall aim to create industry-partnerships to establish a good design culture in the locality and play a major role in the direction of the growth of the design sector. It shall take the cause of promoting design and related activities and also provide a good infrastructural setup for businesses to partner in design and research activities. It shall also aim to provide the physical infrastructure for various design associations and organizations, to ensure a co-operated design growth in our nation, and also to ensure the involvement of the institute itself in the activities.

The objectives can be summarized as

1. Provide quality education.
2. Nurture professionals from a wide range of specializations.
3. Establish a good research and development base.
4. To promote the growth of the newer fields in India, and raise the quality of well-established sectors.
5. Provide design services and assistance to the local businesses.
6. Collaborate with business for design development, and utilize this channel as a source of funding.
7. To propagate the cause of developing a design culture in the locality and take a leading role in it.
8. To establish itself as one of the best centres in our nation for design education.
9. To provide a working model of a design school in India, and establish standards and procedures which can be replicated at other places.

12 UNDERSTANDING DESIGN SCHOOLS

12.1 INTRODUCTION TO DESIGN SCHOOLS

A design school is a place where new ideas germinate, strike roots and grow tall and sturdy. It is a unique place, which covers the entire universe of knowledge. It is a place where creative minds converge, interact with each other and construct visions of new realities. Established notions of truth are challenged in the pursuit of knowledge. It has to foster an environment of freedom and liberty which stimulates research and learning. Through research and teaching, they create, evaluate and bring about advances in knowledge and culture. Teaching and research have to be inseparable, because the purpose of the education is not only to impart knowledge to young people but also to give them opportunities to create their own knowledge. Active and constant engagement with the young minds and hearts of the society also implies that the school serves the society as a whole.

For the student education is no longer viewed as a good in itself, but also as the stepping-stone into a higher orbit of the job market, where the student expects a concrete monetary return, and consequently in this perception, the educational institutes are expected to be in tune with the emerging needs of the society. The graduates should be sufficiently exposed to interdisciplinary experiences, which can sustain them when the demands of a particular job market changes.

The design school is a representation of the humanist traditions of the world and it constantly endeavours to fulfil its mission by attaining universal knowledge, which can be done only by transcending geographical, cultural and political boundaries. It affirms the need for all cultures to know each other and keeps alive the possibilities of dialogue among them. It is also important to develop a scholarly and scientific outlook. More than specific factual knowledge, a scientific outlook calls for an analytical and questioning attitude and the continuous exercise of reason. To prevent the fragmentation of knowledge, the idea of a school should at the same time aspire to encompass the world of work in all its forms.

Design schools are typically spaces where teaching and research go together. They are closely linked. Research and teaching are simply different aspects of academic work. To teach effectively one needs to actively engage in research. In our present context teaching

and research have come to be thought of as separate activities. This disjoint between teaching and research has led to a situation in which, on the one hand, most of the educational institutes have been reduced to the status of centres that teach and examine masses and, on the other hand, more and more elite research bodies are being created where researchers have absolutely no occasion to engage with young minds.

It is essential to use the local knowledge base of the workers, the artisan and the professional expertise available. The school cannot be kept itself at a distance from the real world outside. The institute must develop as a whole and it should not happen that within the institute, there are distances between disciplines and which grow in complete ignorance even of each other's presence. A system of routine examination can only test the memorizing capability of the students. The students must be encouraged to pro-actively engage in their goals, and not be measured by any artificial method of grading, which would insulate them from the real world problems. The institute should relate to the world outside and the walls of disciplines need to be porous enough to let other voices be heard.

The institute should aim to engage the students with the world surrounding us - both local and international. Exposing students to the world of work, plays two related and essential roles. First, by helping them to understand the reality of different kinds of work, and those who perform this work, ranging from manual labour to intellectual tasks, it sensitizes them to the conditions of a universe of persons outside of their own. Second, it allows them to apply what they have learnt in the classroom to real-world situations, and in doing so not only makes them better prepared for their own entry into the world of employment or academic research, but also strengthens their understanding of the underlying concepts they are supposed to have learned.

Even within the institute there is a lot the various disciplines can learn from one another. Inter-seeding and exchanges of thoughts and ideas are more effective at student level, as the student minds are untouched by real-world difficulties and prejudices, which only narrow the vision. History has proved this time and again, with several innovations taking root in an unrelated field and only being accepted after its success. Such an inclusive focus in education will foster creativity and collaboration between the students. The education should be seen in its totality and subject areas not be determined in isolation.

The institute aims to adopt an inclusive approach which treats knowledge in a holistic manner and creates exciting opportunities for different kinds of interfaces between the disciplines.

It shall aim to be a pioneer in research permitting all the design professionals to connect with other institutes in the vicinity and create teaching opportunities for the professionals and exposing the students to the best available knowledge.

The institute shall create an environment where the students shall be inducted into a community of participant members, imparting a new ethos, with focus on progress through reasoning and collaborative practices.

The institute shall consider the real world as an index and all performances and results be benchmarked against the real-world situations.

12.2 ACTIVITIES IN A DESIGN SCHOOL

12.2.1 Academic:

Lecture

Lectures are the primary mode of teaching. Best suited for transferring information/concepts/theory.

Tests

Frequent tests are conducted to verify whether concepts are being understood. It is applicable only for theoretical subjects.

Discussion Seminar

Where discussion on pre-assigned readings or on brief lectures/presentations.

Guest Lecture/Seminar

Special presentations for students given by visiting professionals or specialists to the students.

Research Seminar

Introduces the students to the process of critical enquiry within a specific field or topic by way of reading other works and understanding the arguments, forming coherent connections, writing to communicate hypotheses, supported by valid arguments.

Studio

The students are confronted by life like situations and told to define the problems and to attempt solving them. The faculty coaches students and provides them with necessary concepts and theories.

Collaborative Studio

The students are confronted by problems and form independent teams to resolve it. The professors take minimal interference and are only give their feedback to the students. It develops leadership skills and fosters better communication amongst the students.

Critical Feedback

Sessions with the faculty or other professionals on a submission basis, where they interact and express their capabilities and are given feedback for their work. It forms an important part in the growth of the student.

Guided Research

Where faculty members coach individual students on 1) conducting research and writing up the results, 2) undertaking research for a design project and writing up the results or, 3) conducting research for proposing a development project and writing up a grant proposal.

Workshop

Where faculty members coach students to help them develop skills in working with certain materials and technologies.

Independent Study

Where a student selects a topic of interest, reads a set of books on that topic and writes up an annotated bibliography. The student is guided in this study by a faculty member who also supervises and approves the bibliography.

One to one Sessions

One to one sessions with a faculty member for hours, which may utilized by the student to discuss any specific issue or as a means for exchange for information for learning.

Internship

Where a student apprentices in an office or a site to experience what it is like to work in a real life situation.

12.2.2 Institutional:

Exhibition

Display of design related project/open for public or select persons.

Auditorium

Public presentation of projects or arts to a controlled audience.

Convention Centre

For events on a large scale.

Design Cell

Undertaking design projects in the name of the institute and functioning as a design service provider. All activities associated with the design process would be involved.

Startup Center

Providing assistance and support for design ideas in execution. It would entail all activities associated with the design process, but more likely on a shared basis.

Public Labs

Providing resources for general public for design activities.

12.3 CASE STUDIES

12.3.1 National Institute of Design, Ahmedabad

AREA: 15,000 sq.m

DISCIPLINES

- Product Design
- Ceramic and Glass Design
- Furniture and Interior Design
- Toy and Game Design
- Transportation and Automobile Design
- Textile Design
- Design for Retail Experience
- Strategic Design Management
- Apparel Design and Merchandising
- Lifestyle Accessory Design
- Graphic Design
- Animation Film Design
- Film and Video Communication
- Photography Design
- Exhibition Design
- Design for Digital Experience
- New Media Design
- Information and Interface Design

TIMELINE

- 1961: Institute established.
- 1966: Animation Film Making launched.
- 1967: The institute was moved to its current campus.
- 1968: Programs in Textile, Furniture and Ceramics launched.
- 1969: Library and Resource Centre built.
- 1970: First undergraduate course commence.
- 1979: NID employees association formed.

THE INSTITUTION

NID was instituted at a time when the need for design intervention as an important catalyst for expanding quality industrial production and enhancing communication was recognized. Design inputs for the industrial sector was recognized as a key competency factor for securing and improving the quality of life of the mass of Indians. Eminent American designers and educationists, Charles and Ray Eames, were invited by the Government of India to suggest the philosophical, institutional and programmatic aspects of how design could be harnessed for public good. Their recommendations led to the setting up of the National Institute of Design (NID) at Ahmedabad in 1961. At present the institute functions as an

autonomous body under the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India. (Eames 1958)

NID is an internationally renowned institution providing design education and is also a catalyst for Indian commerce and industry. NID has rendered more than five decades of service, going through several ups and downs, and has contributed to India's development. The institute's graduates are active in all sectors of the economy, ranging from textiles to film making to product design and so on. The institute runs on an ethos that good design is good business and that it contributes to economic prosperity and better quality of life. NID has been playing a significant role in promoting design through various initiatives. NID is acknowledged as an institute contributing to the design profession and encouraging economic and holistic growth through leadership in education, research, and design service to the society. NID has been monumental in its contributions to the Indian design scene. NID invited many well known designers to its campus with many of them spent significant time at the school teaching and designing. This has been instrumental in uplifting the standards at the school.

The method of design education at NID is unique and has been central to its high standard of education. The curriculum generates the scope for opportunities to integrate experimental and explorative learning in order to understand and achieve a high degree of creative innovation and quality. The framework is flexible to permit all the students to learn and develop in their own way. The core objective and aim with all exercise are same, but the context and relevance are administered by the faculty based on existing situations. The institute aims to instill a professional attitude amongst the student through its educational processes. Thorough understanding of technical, managerial and design fundamentals along with a strong exposure to real life situations so that they are able to experience how the intellectual, creative and other skills acquired could be adopted to benefit the user, society and industry. A unique feature of NID's design education program is the openness of its educational culture and environment where students from different faculties and design domains interact with each other in a seamless manner. NID has established exchange programs and ongoing pedagogic relationships with several overseas institutions as well.

ARCHITECTURAL OBSERVATIONS

- The institute has been designed keeping in mind the need for the spaces to constantly change and adapt.
- The floor plates are supported on a square column grid, and permanent partitions are used only at places which have a permanent function assigned to them and are generally shared within the institute.
- The classrooms and studios are defined using modular aluminium partitions which are demarcated by the management.
- Often there is an intersection of access paths, to the extent where the entrances for certain classes were through another classroom. Certain corridors also pass through dedicated functional areas. Such adaptations have been functional due to the informal nature of the classrooms, workshops and studios themselves.
- The management, faculty and resource labs are however well-defined with restrictions on access as well. Some professors run their offices within their departments, which was developed later.
- Internal courtyards have been used to ensure natural light and ventilation to all areas, however some areas lack both, which is probably a result of iterations made later on.
- The surface of the rooms which faces exterior consists of large openable, transparent modular windows to allow the light to penetrate into the rooms.
- The ground floor is used to house the management and public areas, with the educational areas being restricted to the upper floors. Certain workshops are however present at the ground level.
- The exhibition area is at the ground level, with a welcoming entrance to the access road outside.
- The canteen is housed in an external structure.
- Certain non-institutional functions are housed in separate structures away from the main building, closer to the entrance.
- The hostel area is situated along the riverfront and can be accessed after passing through the institutional building or an alternative access path from outside the campus.

- The vertical access is established mainly through staircase blocks which are central to the design. However, ancillary vertical access means have been added at a later stage to the peripheral sides of the building.
- There are running balconies at the peripheral edges of the building which are used as passages.
- The building has been designed with exposed concrete and bricks to exhibit the raw nature of the material, and follows the local style.

LEGEND

STUDENT INFORMAL	STUDENT FORMAL	ADMINISTRATION AREA	FACULTY AREA	INSTITUTE AREA	CLASSROOM AREA
------------------	----------------	---------------------	--------------	----------------	----------------



Ground Floor Plan (N.T.S.)



Art and student displays are incorporated throughout in the plan.



A large central courtyard helps in regulating the internal environment.



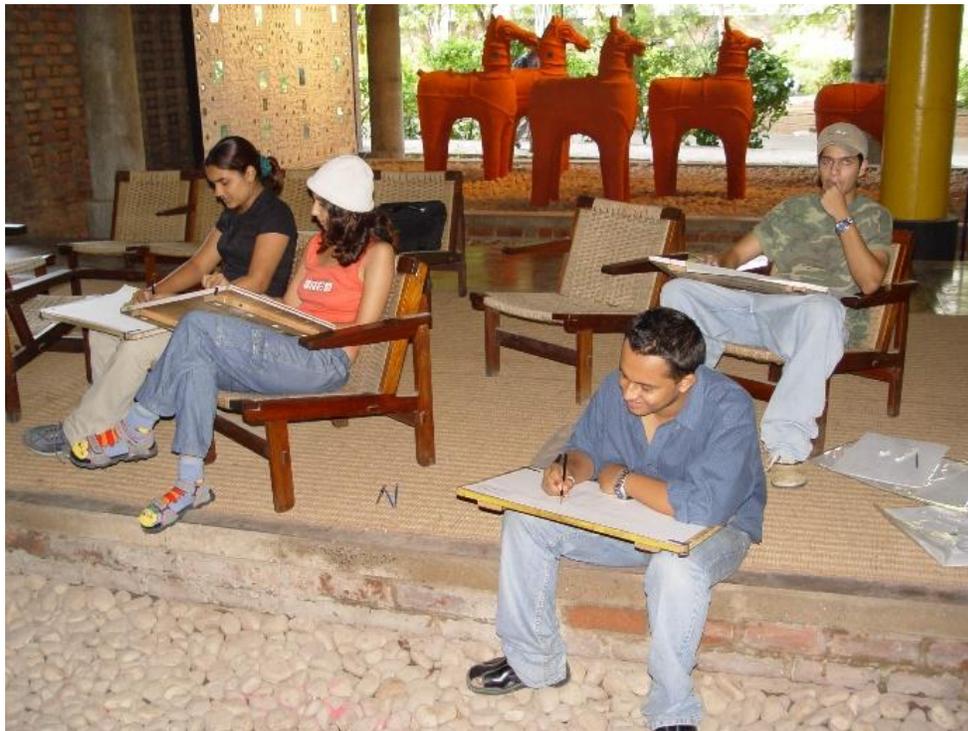
Pathway leading up to the exhibition is used to exhibit student work for the public.



Aluminum temporary partitions



Courtyards are used to optimize light and space.



The overall atmosphere is of an informal nature.

12.3.2 IIT-IDC, Mumbai

STUDENT CAPACITY: 250

DISCIPLINES

- Industrial Design
- Animation Design
- Visual Design
- Interaction Design
- Mobility and Vehicle Design

TIMELINE

- 1969: Institute established.
- 1980: Masters of Industrial Design course started.
- 1984: Masters of Visual Design program started.
- 1985: Construction of the annexed building completed.
- 1990: Masters of Animation and Interaction Design program started.
- 2005: Doctorate program started.

THE INSTITUTION

Industrial Design Centre (IDC) is a premier design school in India, established by the government of India at the campus of Indian Institute of Technology, Mumbai (IIT Bombay). The initiative and responsibility for setting up the institute was taken up by Prof. Sudhakar Nadkarni, who had been a faculty at NID, Ahmedabad previously. The institute was established with an objective to, 'Prepare students to enter into new creative activities as professional industrial designers who with experience and maturity can reach the highest level of design practice, research and development necessary for the industry'. The institute was set up for the study of environmental design problems within the field of industrial production and communication. However, it was soon realized that, if the Centre was to render useful services it should diversify its existing training facilities to enable it to meet adequately the design needs in the areas of industrial design and visual communication.

The program at IDC aims to develop skills, knowledge and aptitude among students to become creative problem solvers who can bring about innovation in the manufacturing and communication industry. It is a unique mix of pedagogic experimentation with pragmatic design approach and blends hard-core problem solving with design research. New thoughts, philosophies and research into several aspects of design are experimented and integrated to have continuous revitalization of the academic programs. Like NID, even IDC has invited international design experts to its campus for interacting, teaching and doing design projects.

The institute focuses on research based design. Several areas have been identified for research and it promotes theoretical and practical research. Faculty members along with students and other research and design staff work together on these issues. The research projects are executed through the formation of focus groups. The institute extends its infrastructural capabilities to these groups to assist them in their work. The institute also assists the focus groups by harnessing its well-established synergies with recognized bodies and providing better reach and a greater platform for the works. IDC has an academic program in design research at the doctoral level.

The institute offers professional design consultancy and advisory services to industries and other organizations. IDC has a dedicated department - Shenoy Design Department - which only undertakes industry projects, with several full time professionals working in the department. Students are not actively engaged into the department, but are involved with certain projects if needed. The research initiatives in the institute are not restricted to the academic environment and extends it to execution by fostering industry tie-ups.

An International Relations Office at IIT oversees and coordinates all international programs of IDC, with an aim to promote new relationships between overseas universities and institutions. An Industrial Research & Consultancy Centre (IRCC) coordinates the overall research and development activities at IIT Bombay. The scope of IRCC undertaking includes sponsored research research/projects, contract research/projects, sponsored student research/projects, having specialized workshops and conducting courses for the benefit of industry. IRCC collaborates with industry and government organizations to foster research and development.

The pattern of design education practiced at IDC has set a benchmark and has been adopted by new design schools set-up in India. It has also extended its support for setting-up of new institutes for the purpose of design promotion. These are in the form of organizing seminars, conducting short term courses and workshops. IDC has managed to import the technology and know-how of internationally acclaimed design practices and centres by sponsoring study visits to centres of design excellence and incorporated it into the design education imparted at IDC. It has also put this knowledge into use by executing design projects for several Indian industrial houses.

ARCHITECTURAL OBSERVATIONS

- The Institute has a great location for an academic environment nestled between 2 lakes along with scenic hills adjoining the campus.
- All students and most faculties live on campus, in student hostels and IIT staff quarters. The peaceful atmosphere of the campus belies the full range of activities that complement academic life.
- The institute has been allocated a building built from some other purpose.
- The case doesn't present an example of the architectural design for a design school, as the original function for which the building was built was something else.
- The original building had to be altered and was extended to house the new programs and several changes made to the building to make it usable as a space for design education and relevant activities.
- A large area on the first floor was completely redesigned to accommodate the Shenoy Design Department, which undertakes industry projects.
- The area was planned as an open plan area, with modular partitions used for creating offices and rooms within. A large part was left open with discussion tables and roll-down projectors, to enable an environment better suited for group work and discussions.
- Due to lack of space for expansion, the institute uses the terrace floor area by erecting temporary structures. The spaces within are divided using similar removable partitions.
- Lift blocks for vertical access are being appended to the periphery of the building to improve the vertical connectivity.
- The management is currently facing shortage of space and are attempting to make several small improvements to the building.



The gathering area is used occasionally for activities involving large groups.



Breakout meeting areas incorporated in plan.



The workshop areas have tall windows for better illumination.



Due to lack of space for expansion, the terrace floor is used by erecting temporary structures.



The terrace floor is used as a full time dedicated project studio.

12.3.3 Pearl Academy, Jaipur

AREA: 10,500 sq.m

DISCIPLINES

- Textile Design for Fashion and Interiors
- Fashion Design
- Fashion Business Management
- Fashion Retail
- Jewellery Design
- Interior Architecture and Design

TIMELINE

- 2005 - The academy opened up an institute in Jaipur.
- 2008 - The academy was relocated and the current Jaipur campus came into operation.
- 2011 - Entered into partnership with Laureate International Universities.

THE INSTITUTION

Pearl Academy of Fashion was set up in 1993 by the Little People Education Society in Delhi. The academy was initially promoted by House of Pearl Fashions Ltd, an Indian export house. In 1995 Nottingham Trent University became the validating body for Pearl courses. New campuses were set-up in Jaipur (in 2005), Chennai (in 2006) and Noida (in 2012). In 2011 Pearl entered into partnership with Laureate International Universities, and it is now part of the LIU global network.

The method of education is very innovative, with a great deal of industry exposure to the students. The students are given opportunities to present their work to industry experts through various displays, exhibitions, seminars, fashion-shows, presentations etc. Notable dignitaries are invited for the exhibitions, where young talents are scouted by industry professionals. The institute aims beyond merely educating the students and aims to give them a platform for exhibiting their talent and ensuring the students are absorbed into the field. This method of having an open environment for the students is one of the core fundamentals on which the institute thrives. The students are also encouraged to part-take in extra-curricular activities. Voluntary student groups are formed for specific purpose or interests. The institute aims to have a thriving campus life for the students, to enhance the student's experience at the academy.

The institute encourages its faculty and students to get global/pan-India exposure by affiliating/collaborating with top higher education institutions in the domain of Art, Fashion & Design in various parts of the world. The international tie-ups enable the students to

participate in reciprocal exchanges, international conferences, study tours and summer school programs. The institute's degree programs are accredited by Nottingham Trent University (UK), under the supervision of the QAA -The British Quality Assurance Agency for Higher Education. Pearl Academy has partnered with over 20 international institutes for exchanges of students and faculty. Pearl Academy is a partner of the Laureate International Universities network, which is the leading network of private post-secondary institutions worldwide.

The institute is very competitive and strives to raise the standards at all possible levels. It has a reputed faculty list, and aims to provide best services possible to the faculty to retain them and improve the quality within the academy. Many of the full-time faculty members study for post-graduation programs as part of their faculty development program while teaching at the academy. The infrastructure provided at the facility is also of an international level. The campus was designed by the Delhi based architecture firm Morphogenesis. The campus has been well-designed and maintained, and represents the international face of the institute. The institute has won several awards and recognition for the quality education provided at the institute. The institute has managed to surpass the government backed NIFT in securing a position of excellency in fashion technology in India.

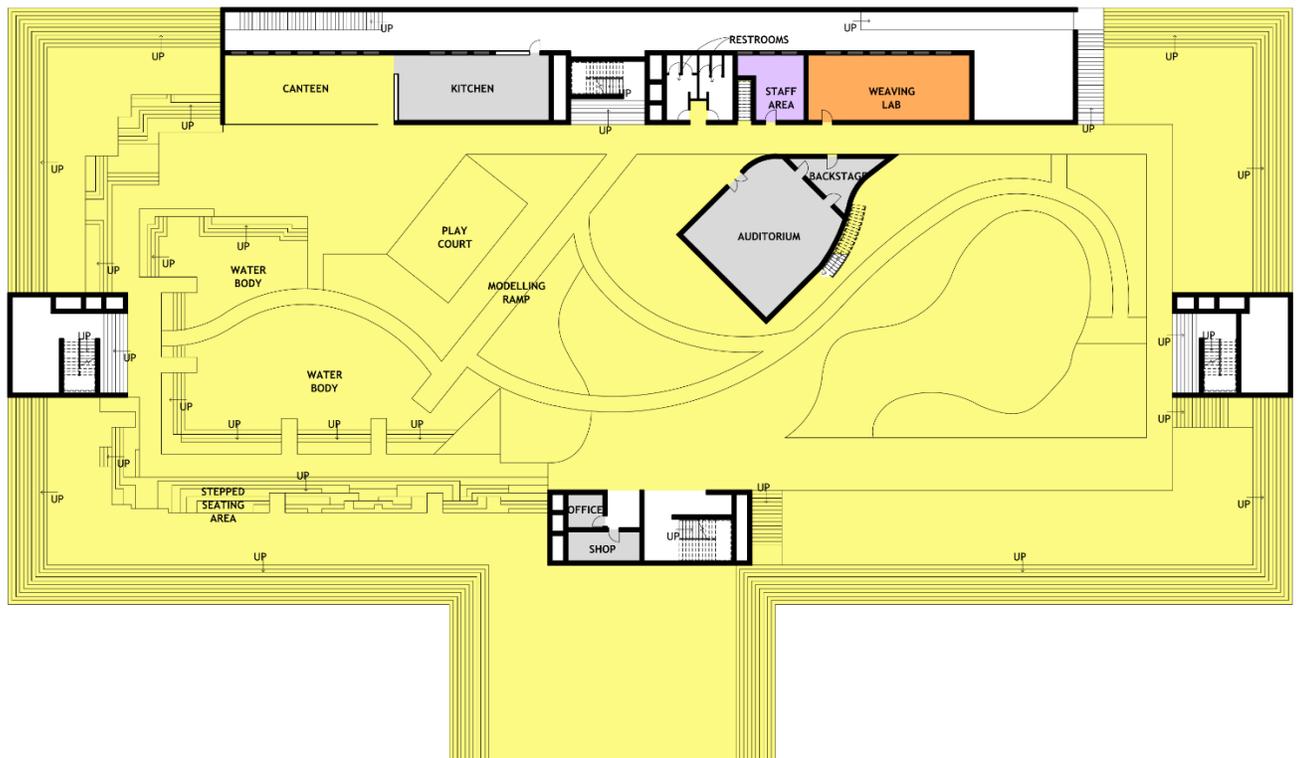
ARCHITECTURAL OBSERVATIONS

- The institute has been well-designed and maintained.
- The entire building has concrete *jalis* along its external wall at a distance of 4 feet from the main peripheral wall which reduces the direct heat gain through fenestrations, yet allowing for diffused daylight. The gap between the 2 external skins is used for other requirements like installing outdoor units for ACs, laying services lines etc.
- The structure is supported on stilts on the ground level, and the space is used for informal activities.
- The ground floor is an interactive space for the students with multifunctional zones which blend the indoors with the outdoors seamlessly.
- The ground floor is actually half a floor lower than the surrounding area, which gives a visitor quick access to the ground and first floor from the entrance. This helps in circulation segregation as the students can easily enter the informal areas and faculty and officials the main building from the same entrance.
- There are water-bodies at the ground level, which helps cool the open ground-floor area, which is already shaded by the building above. This enables the ground level to remain a usable open area even in the hot climate of the desert region.

- The building is rectangular in plan, with the rooms abutting the edges, and corridors facing the central courtyard. This gives a unified feeling to the entire institute and separates the institute from its surroundings.
- The library and seminar hall interrupts the central courtyards, splitting it into 2 and adding drama to the courtyard. It also connects the 2 long sides of the building.
- Several elements in the design, which are evolved from the local traditional architecture have been implemented, which gives a sense of identity as per its location to the building.
- The materials used for construction are a mix of local stone, steel, glass, and concrete chosen keeping in mind the climatic needs of the region while retaining the progressive design intent.

LEGEND

STUDENT INFORMAL	STUDENT FORMAL	ADMINISTRATION AREA	FACULTY AREA	INSTITUTE AREA	CLASSROOM AREA
------------------	----------------	---------------------	--------------	----------------	----------------



Ground Floor Plan (N.T.S)



First Floor Plan (N.T.S)



Second Floor Plan (N.T.S)



The stilted ground floor adds a feeling of lightness by providing unobstructed views.



Concrete jalis along its external wall reduces the direct heat gain through fenestrations.



Student work exhibited along the main access corridors.



The curving plan of the library and studio break the monotony of the courtyard.



Ground level space for the students with multifunctional zones.



Quick access to the ground floor student area from the outside.

12.3.4 Bauhaus, Dessau

AREA: 8,500 sq.m

DISCIPLINES

- Industrial Design
- Product Design
- Graphic Design
- Furniture Design
- Interior Design
- Textile Design
- Architectural Design

TIMELINE

- 1919: The school was started in Weimar by Walter Gropius in a derelict factory.
- 1920: Ceramic workshop, wood-carving and book-binding set-up.
- 1922: Institution of housing cooperative established.
- 1925: The design school moved to its iconic campus in Dessau.
- 1925: Bauhaus GmbH started to market products designed at the institute.
- 1927: Architecture course started.
- 1929: A construction studio is run for a few years.
- 1929: Metalworks, wall-painting and carpentry are merged to form Interiors Department.
- 1930: The school had to be relocated to Berlin.
- 1931: The workshops and architecture department are merged to become the building and interior design department.
- 1933: The school was decommissioned due to political pressure.
- 1996: UNESCO adds the institute building to the World Heritage Sites List.

THE INSTITUTION

The Bauhaus was founded in 1919 in the city of Weimar by German architect Walter Gropius, but relocated to a new campus at Dessau in 1925. Its core objective was a radical concept: to reimagine the material world to reflect the unity of all the arts. The Bauhaus had a goal of creating objects through a unity of artistic work across all fields. The various departments of the Bauhaus were segregated in name only, and cross-pollination was the written rule. The institute had a craft-based curriculum that would turn out artisans and designers capable of creating useful and beautiful objects appropriate to this new system of living. While maintaining the emphasis on craft, the institute repositioned the goals of the school in 1923, stressing the importance of designing for mass production.

The curriculum commenced with a preliminary course that immersed the students, who came from a diverse range of social and educational backgrounds, in the study of materials, color theory, and formal relationships in preparation for more specialized studies. Following their immersion in Bauhaus theory, students entered specialized workshops, which included metalworking, cabinetmaking, weaving, pottery, typography, and wall painting. The format of education at Bauhaus was very successful and soon other schools picked up programs similar to the one at Bauhaus. In fact, most design programs in current schools have been developed from the initial mode of teaching practiced at Bauhaus.

The school aimed to give a new direction to the existing practices in design. It aimed to make the designer aware of his social responsibility. It exhorted the designer to design for the masses. It picked up the idea of industrially mass produced designs which could reach the maximum number of people. It blended technology with art and also tried to blur the distinction between the artist and craftsman. The institute also tried to merge the various disciplines for the designer, with a view that designers should approach their design issues holistically. The institute sought to be a pioneer for future design practices and the building was designed which exemplified the spirit embodied by the institution.

The increasingly unstable political situation in Germany, combined with the perilous financial condition of the Bauhaus, caused the institute to relocate to Berlin in 1930, where it operated on a reduced scale and ultimately shutdown in 1933. Between 1919 and 1933, the Bauhaus School, revolutionized architectural and aesthetic concepts and practices. During the turbulent and often dangerous years of World War II, many of the key figures of the Bauhaus emigrated to the United States and other countries, where their work and their teaching philosophies influenced generations of young architects and designers. The Bauhaus movement is said to have defined the way of living for the modern world.

ARCHITECTURAL OBSERVATIONS

- The campus building at Dessau contained many features that later became hallmarks of modernist architecture, including steel-frame construction, a glass curtain wall, and an asymmetrical, pinwheel plan, throughout which studios, classrooms and administrative spaces were distributed for maximum efficiency and spatial logic.
- The buildings were designed from the basic starting point of a geometric shape and then more intricate details were added after.
- The Bauhaus style, was characterized by the absence of ornamentation and by harmony between the function of an object and its design. These principles were entailed in the design of the building as well.

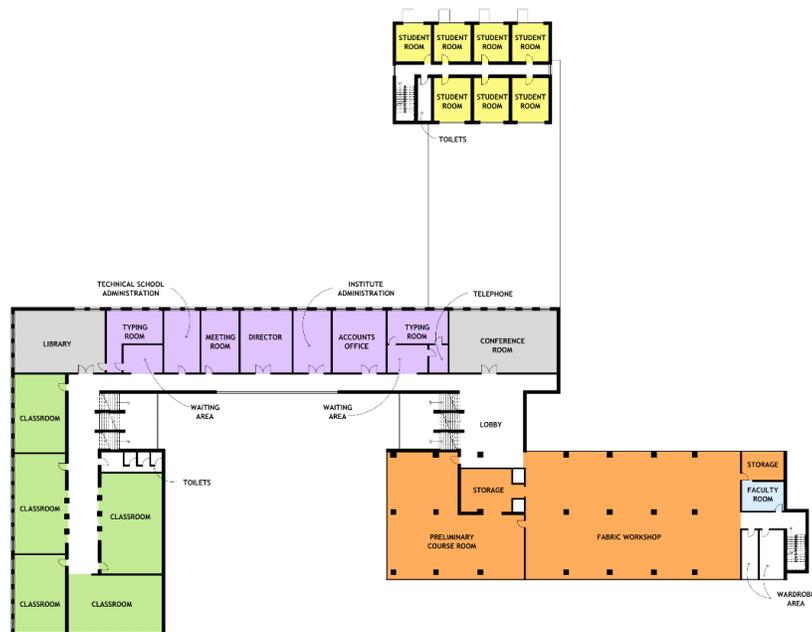
- The glass curtain wall suspended in front of the load-bearing framework defines the exterior of the workshop wing and openly shows the constructive elements.
- Glass was used for creating the impression of lightness.
- The parts of the Bauhaus building were taken separately according to their functions and each was designed differently.
- There is no central viewpoint and the observer must therefore move around the whole building.
- The entire complex is rendered and painted mainly in light tones, creating an attractive contrast to the window frames, which are dark.
- The interiors aim to differentiate between supporting and masking elements through the use of colour, aimed to accentuate the construction of the building.
- The basic structure of the Bauhaus consists of a clear and carefully thought-out system of connecting wings, which correspond to the internal operating system of the school.
- The technical construction of the building demonstrated the latest technological development of the time.
- Walls were used with the sole function of acting as screening partitions.
- Due to improved technology, window areas were maximised.

LEGEND

STUDENT INFORMAL	STUDENT FORMAL	ADMINISTRATION AREA	FACULTY AREA	INSTITUTE AREA	CLASSROOM AREA
------------------	----------------	---------------------	--------------	----------------	----------------

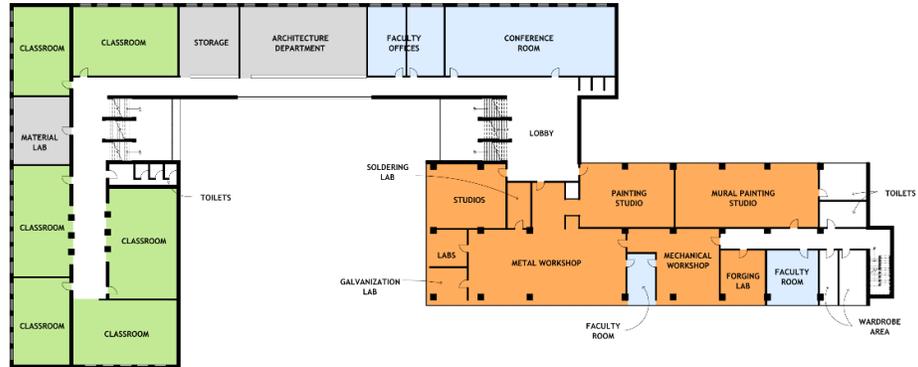
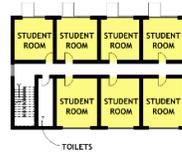


Ground Floor Plan (N.T.S)



First Floor Plan (N.T.S)

Proposal for Design School at Navi-Mumbai



Second Floor Plan (N.T.S)



Simple geometric shapes, compositions and colors define the characteristic style of Bauhaus.



The building appearance from aerial point of view was also considered, acknowledging the importance of the recent development of air-plane at the time.

Proposal for Design School at Navi-Mumbai



Externally the building is meant to be experienced by walking around, instead of creating a single point of focus.



The simple shapes, colours and minimal appearance is also used for the interior designing.



The entrance was designed in a simple fashion, which was quite unusual at the time.



The access passage cuts across the campus with the administrative block bridging over it.

13 DESIGN

13.1 DEPARTMENTAL REQUIREMENTS

Institutional Areas

- Library
- Workshop Area
- Exhibition Area
- Reception Area
- Reception Display Area
- Informal Performance Area
- Auditorium
- Canteen
- Offices

Architectural Department

For Students:

- Drafting Space
- Lecture Space
- Classrooms
- Model Making Space
- Sketching Space
- Computer Area
- Thinking/Brainstorming Space
- Common Discussion Space
- Presentation Area
- Crit Space
- Dedicated Project Studios
- Open Working Studio
- Material Workshop Area
- Visualization Area
- Student Offices
- Student Exhibition Area

For Teachers:

- Common Area
- Staff Roo

Graphics Department

For Students:

- Lecture Space
- Classrooms
- Model Making Space
- Sketching Space
- Computer Area
- Dark Room
- Photography Studio
- Lithograph Area
- Intaglio Prints Area
- Silkscreen Prints Area
- Thinking/Brainstorming Space
- Common Discussion Space
- Presentation Area
- Crit Space
- Dedicated Project Studios
- Open Working Studio
- Multipurpose Space
- Visualization Area
- Student Offices
- Student Exhibition Area

For Teachers:

- Common Area
- Staff Room

Industrial Design Department

For Students:

- Drafting Space
- Lecture Space
- Classrooms
- Model Making Space
- Sketching Space
- Computer Area
- Thinking/Brainstorming Space
- Common Discussion Space
- Presentation Area
- Crit Space
- Dedicated Project Studios

- Open Working Studio
- Wood Workshop Area
- Metal Workshop Area
- Glass Workshop Area
- Ceramics Workshop Area
- Visualization Area
- Student Offices
- Student Exhibition Area

For Teachers:

- Common Area
- Staff Room

Automobile Department

For Students:

- Drafting Space
- Lecture Space
- Classrooms
- Model Making Space
- Sketching Space
- Computer Area
- Thinking/Brainstorming Space
- Common Discussion Space
- Presentation Area

- Crit Space
- Dedicated Project Studios
- Open Working Studio
- Visualization Area
- Student Offices
- Student Exhibition Area

For Teachers:

- Common Area
- Staff Room

INTRODUCTION	Studio Discussion Area Classroom	Lecture Room
PROBLEM/BACKGROUND ANALYSIS	Library Computer Lab Studio	Discussion Area Classroom Lecture Room
CONCEPTUALIZATION	Thinking Area Studio	Discussion Area Working Area
CONCEPTUAL VISUALIZATION	Sketching Area Modeling Area Computer Lab	Drafting Area Workshop Studio
RECONSIDERATION	Thinking Area Crit Area	Discussion Area Presnetation Area
FINAL DESIGN DEVELOPMENT	All	
PRESENTATION PREPARATION	Sketching Area Modeling Area Computer Lab	Drafting Area Working Area Studio
PRESENTATION	Crit Area Discussion Area	Presnetation Area Lecture Room
CRITICAL ANALYSIS	Crit Area Discussion Area	Presnetation Area Lecture Room

Figure 13-1: A generalized list of functional requirements in the several stages of design developments within a single design discipline.

13.2 DESIGN OBJECTIVE

The design concept grows on the ideas assimilated and learnt from the case-studies. A similar pattern of requirements was observed in all the functioning colleges. The concepts have been assimilated and structured into more clearly defined and functional identities and organized accordingly to facilitate an easier understanding of the requirements for the design process and an easier design process on the whole.

A flexible design sits at the heart of the design concept. To make the entire environment as flexible as possible at all levels of operation was the ultimate goal. Flexibility in terms of the management, the spatial experience, the end-user utility and maintenance and upgradation was explored.

The design also reflects the changing understanding of design practices and attempts to provide a frame-work for the designers to practice and explore new dimensions. The Bauhaus defined a new era in design which was also reflected through the architecture of its facility. In a similar manner the design makes an attempt at reflecting the more recent developments in design practices and provide an identity and impetus for the changing design philosophies.

13.3 DESIGN CONCEPTS

13.3.1 Modern Requirements of Space

Throughout history, architecture has gone through several transformations, but the core idea at all times, has been to create a chunk of space which is comfortable and optimally safe. This has been a basic requirement of any space, and further modifications to make the space suitable for other functions would be considered only if it did not object to these requirements.

In the current context, we call this chunk of space as a "room", with walls on 4 sides, a floor and a ceiling. The room serves a purpose of protecting the interiors from the elements of nature, giving privacy and optimum comfort levels for all senses. This definition is applicable in the current context, and historically many other forms of shelters could be termed as rooms. Niches in caves, hollow tree-trunks, and discarded vehicles can still be justified to be rooms. There is the likelihood that these spaces may not fulfil all the requirements of a habitable space, but even in a perfectly conducive environment, a 'built' house is more preferable option for habitation instead of a one that has been observed to be 'habitable'.

It has been a primitive nature in man to resist all that is uncertain to him. Hence, spaces were built as he wanted them to be. It also gave him the power to choose where he wants certain activities to happen, and use it as a tool to optimize his existence.

In order to recreate the conventional spatial experience, the conventional buildings and spaces was observed and analysed. It was observed a mixture of 2 separate factors, affected the way a room is perceived. The structure, which ensures safety is one and the finish and service, which ensures comfort is the second. In a conventional room, we can divide it into 3 components, because of variability of measures taken in order to make a space comfortable.

The structure, which provides stability and safety is tried to be hidden from the user generally to avoid its effect on the visual perception of space.

Surface finishes, is the second part, which directly affects the way the user sees the space and makes a great impact on his perception. At times, this aspect is also optimized to provide a better experience for the sense of sound and touch for the user.

Services is the last part, which can be termed to be a modern part in the development of spaces. They generally comfort the senses of the user.

For a room, to be justifiable with any more adaptations for any other purpose, it is essential that these aspects are included, failing which the intended space may be termed 'habitable'.

The design methodology proposed tries to blur the distinct lines, between the aforementioned aspects, which comprise the experience of a space. Additionally, it leaves an argument open to practically unify the Services and Surface Finishes aspects into a single element, which can be realized with more technological improvisations.

13.3.2 Built and Unbuilt

The design proposal aims to maximize the flexibility of the usage of the space. A great deal of importance was placed on establishing the relation between the built and unbuilt aspects of the environment. The unbuilt part has includes the areas within the structures, but not regulated and very strict and defined manner, spilling away from the built environment harmoniously. A platform created at any level, but exposed to the environment, is considered as an unbuilt environment. The difference between the built and unbuilt had to minimize with an intent to create a more flexible learning space, and to break away from the conventional teaching approach of learning inside a regulated room. The unbuilt portions also acts as the common medium amongst the students where they can interact with students from other disciplines, and promote a cross-pollination of ideas within the institute.

However, with the intent of developing an open environment for the students it was also essential to ensure a good conducive atmosphere in the learning spaces. In order, to maintain the functionality of any space as a usable learning space in any environment it is essential to protect it from the natural elements. Hence, the term "unbuilt space" had to be adjusted to make it an "unregulated space".

Regulated environments have the aspects of the space, which is experienced by the user, controlled to such an extent that it feels monotonous. After hearing the responses from tutors involved in design schools, a conclusion was drawn about the need for the environment to break monotony for an ideal design learning space. The professors, would often keep shifting the classrooms for the students to have an energized atmosphere for the class. Although this would be possible even in a regulated environment, a more natural setting is preferred. A conclusion can also be drawn by examining the planning of the design schools setup, where a less regulated environment is preferred for the learning spaces, and the administrative areas are designed to be regulated.

The unregulated environment feels more natural, even if it is slightly out of the comfort zone for a few. Open space has been scientifically proven to be more conducive for learning than the boxed environs of a room.

13.3.3 Customizability

The Bauhaus was representative of a novel practice in design with principles of minimalism and mass production at its heart. Analysing the concepts practiced at Bauhaus leads to the understanding that the philosophies developed at Bauhaus was well-adapted and suited at its time and gained acceptance, as the design processes were such that it could reach a wide audience. Standardized rules and frameworks allowed the design to be replicated and mass-produced, which could reach a large number of people. Bauhaus employed cutting edge technology at its time which enabled the design propagation.

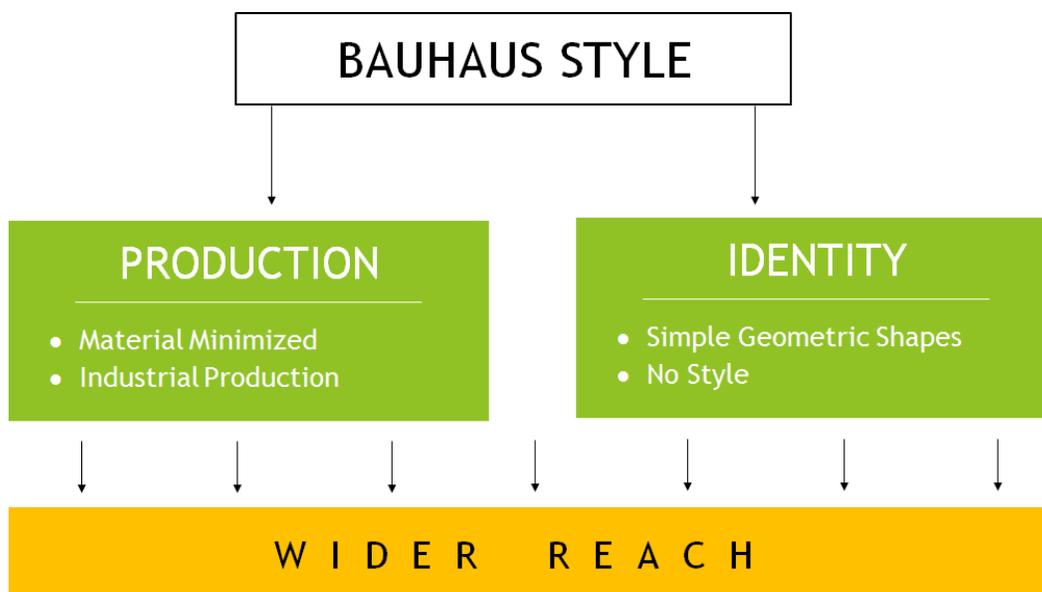


Figure 13-2: The Bauhaus strategy.

The barometer for judging the success for any design practice can be the scale of its audience. A design school representative of its time needs to acknowledge the prevalent design practices and also anticipate the future directions and requirements.

A recent growth in design practices has been the growth of mass-produced and mass-customized designs. It may be a direct fallout of the principles rooted in the Bauhaus ideology, which were in turn restricted by the technology at the time. Mass-production required designs to conform to certain restrictions and also was dependant on ignoring the minor differences in choice of the people.

Mass-produced designs followed the one-size-fits-all idea. The recent trend of mass-customized, mass-produced designs relies again on the gifts of modern technology. Advanced tools and techniques allows designs to be made efficiently for a large audience, and yet be made in a manner to be tailor-made for the specific user. It places a greater responsibility on the shoulders of the designer who now has one more requirement to address to. It also enforces him to undertake a greater study of the design process, as he has to have a greater understanding of the design forces in play.

The proposed design tries to acknowledge this shift in design practice by providing a framework for the institute and designers to build their habitat on. Besides serving the essential requirements, the design takes a blank canvas approach. The spaces are user-modifiable themselves and even large scale alterations are easy to execute. In terms of the finish of the building, again a framework has been provided, which can be easily modifies or replaced as and when required. A blank canvas would be provided, which could be filled by art, which the users deem as art in their own right.

This would encourage greater experimentation and innovation in the design school and also establish a mark of significance for the city on the global design scene. The said design ideology relies heavily on computer assisted processes and practices, hence the due consideration was also accorded to the requirement of such a practice.

13.3.4 Flexibility

The nature and function of the spaces in a design school are constantly changing, and the planning needs to be highly flexible, in order to accommodate the constantly changing needs. The spaces are altered drastically, on a daily basis as well as year by year.

The growth and development of design school less of a well-drawn plan, and more of adaptations and progress measured and planned annually. It is a process of organic growth, with sectors which are in greater demand growing and developing at a faster pace. This growth may not be sustained, as per the market demands of such professional are met, and there may also be the situation of shift of focus from one discipline to another. In this context, addition of more floor area, setting up new departments, reallocating departments, curtailments of departments etc. are planned after every academic year. It is difficult to execute alterations and additions to the built environment during the course of the academic year, as the process affects the learning environment of the entire school. It provides a small window of 2-3 months for such alteration, between the end of a year and the beginning of the next. This is further complicated by the different vacation periods of different departments. Hence, a system, wherein such alterations can be executed in a short time is ideal. If the entire process doesn't affect the environment of the institute, it is more ideal.

On a daily basis, changes are required on a daily basis, as the function of the space changes. Unlike technical fields of learning, a small portion of the design learning process takes place in conventional classrooms. A design class generally has several different activities within a day, or stretched over a week. The activities are highly specific to the discipline, and in such situation the tutors or students themselves establish the planning of the space. Hence, a great emphasis has to be placed on developing the spaces such that it can be easily altered by users of the space themselves. The newly formed spaces however, need to service the space well, as the user-cum-planners of the space focus only on the spatial arrangement, and less on other technicalities.

In such a situation, a modular approach may be useful, even if the initial expenses are higher. The flexible design approach would also help each department, to develop a spatial identity of itself over time. It would mean the creation of spaces over-time, which are not only adjusted to the user, but also reflects the institute.

Expecting future alterations in the original design, it is essential that the design scheme be kept as simple and as flexible as possible, to be adapted and altered as required in the future. However, at the same time, it is essential, that there is no compromise on the quality of space, and it can be easily moulded for best use for any nature of activity. In order to keep the development open-ended, a modular approach has been taken up.

For the vertical aspect of the system, a surface perpendicular to the ground surface would be the most effective as surfaces, not perpendicular to the ground, would create negative spaces, which may be difficult to handle in future space alterations.

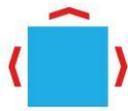
A study was done on the options of the units on which the modular system could be based. It was essential to have a common grid, which could sustain the modules. The grid would be the basis on which further extensions and alterations would be made. The basic grid geometry would have to be such that, it tessellates, and provides flexibility in laying the grid. However, at the same time, it was essential, that suitable interior spaces are created. The interior spaces would also have to be such that it is easy and flexible to divide or expand it at a later stage.

A semi-Euclidean pattern (which contains two different repeating geometric patterns in any direction) may help us develop tessellating pattern, with a flexible option of spatial development. However, in order to simplify the modular units and overall design, the possible grid options was restricted to strictly Euclidean shapes (shapes with a single geometric pattern repeating itself in any direction). There are only 3 strictly Euclidean shapes - Squares, Equilateral Triangles and Hexagons. For the same purpose the use of square grids, triangular grids and hexagonal grids was considered. The advantages and disadvantages was considered on the following parameters:

- Possible direction for future expansion.
- Analysis of negative spaces.
- Analysis of internal angles.
- Options for merging adjacent units.
- Creation of internal angles on interior sub-division.

Proposal for Design School at Navi-Mumbai

Possible direction for Future Expansion



3



2



5

Analysis of Negative Spaces



0



0



3



2



0

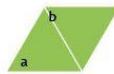


4

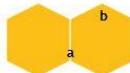
Analysis of Internal Angles



1

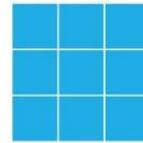


2



2

Options for Merging Adjacent Shapes



53

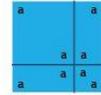


68

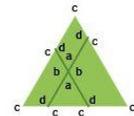


1

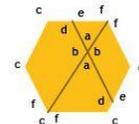
Creation of Internal Angles on Interior Sub-division



1



4



6

*Only those options were counted, where the interior spaces were a convex shape.

13.3.5 Modularity

On analysing the grid options, it becomes obvious that the square grid best serves the required needs. It is more restricted in its flexibility than the triangular grid, in terms of possibilities of aggregations of units. It provides lesser options for directions for future expansion than the hexagonal grid. However, the ease of use it provides in terms of utilization of internal space is unmatched by the other considerations. A rectangular grid also possesses most of the said qualities, however, it adds certain restrictions to the orientation and directions in planning.

A square grid approach, with every square being a spatial unit for design is at the heart of the layout. The size of the grid was chosen at 7.5m x 7.5m. The dimensions was finalized considering the following points:

- Structural viability.
- The number students per batch.
- The possibility for merging adjacent units.
- Ease in using collapsible walls.

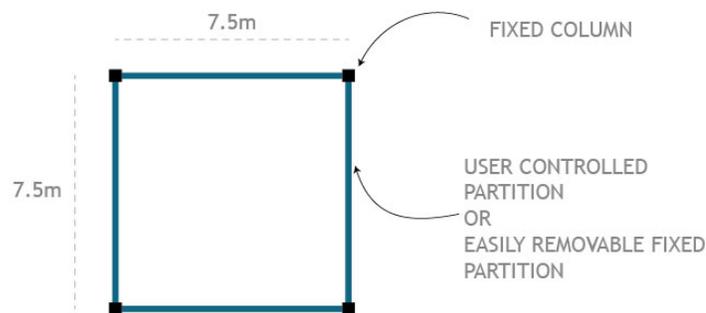


Figure 13-3: Dimensions of a single module.

The proportions of a 7.5m x 7.5m is well-suited to be used for various group activities for group sizes up to 15 persons. The internal planning for different functions demonstrated in the following chapters exhibit the versatility of the design. The space may be considered to be slightly more than the ideal requirement. This is compensated by the flexibility such a size allows in situations when corridors have to be drawn through some units to adapt to the overall layout.

Merging square sized module give the option of developing either a rectangular space or larger square space, which offer some advantages in designing in various functions in the same size.

One of the most important a constant size provides if the flexibility in making changes, where functions can be swapped easily due to the constant size of the space. The invariable nature of the space can be regulated by employing space managers along the corridor which doubly ensure the task of efficient space usage.



Figure 13-4: Space managers ensure efficient utilization of spaces.

13.3.6 Planning (Circulation)

The zoning tries to minimize the distinction between different zones and foster interdisciplinary activities, interactions and collaborations. The cross-pollination of ideas in a design school is essential to drive innovation. It is also essential for the students to gain experience in cross-discipline practice which is prevalent in practice outside the design school.

A greater emphasis has been placed on segregation use-wise more than discipline-wise. This has been done with an objective to improve overall efficiency in utilization of institute resources. The institute tries to create an open but organized setup wherein the facilities are available to all persons at all times with no discrimination in purpose use. At the same time it ensures liability and may help in reducing reckless wastage.

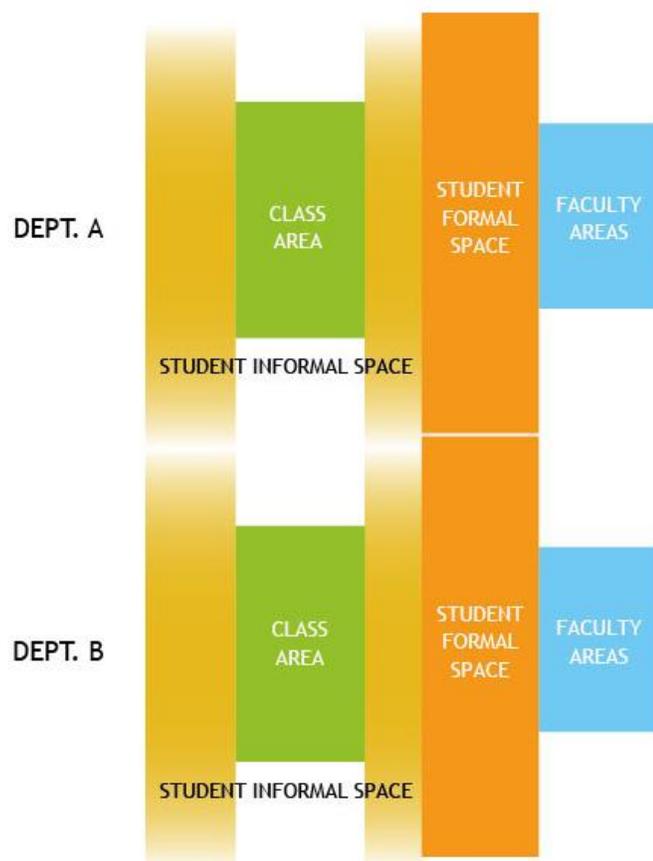


Figure 13-5: Conceptual explanation of the zoning.

Each department is roughly segregated into 4 types:

Class Area

It has the batch studios and other facilities required for running a design course.

- **Formal Area**

It has the special facilities or and in a more controlled environment.

- **Informal Area**

It is the least regulated and open for student for use full-time.

- **Faculty Areas**

They are restricted only for faculty members for their offices or research activities.

The class areas would be self-sufficient in all aspects for running the design course. It ensures a consistent learning environment with ease in usage.

The shared formal spaces ensure optimal utilization of the facilities at the institute. The facilities can be used by any individual or groups as required, and will be allotted on request basis.

Informal areas would be located at the ground level with minimal visual barriers and open views outwards. It would be open for students all time and will try to minimize the distinction between 'work' and 'play' for the students.

Faculty areas close to the student areas ensure that the students have ample to opportunity to seek their guidance, and also involve the students with the faculty for projects.

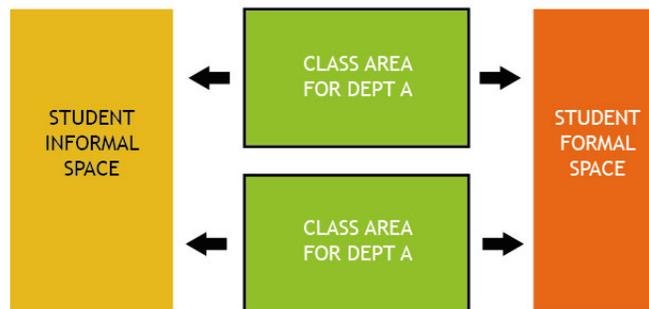


Figure 13-6: Connectivity between the zones.

14 DESIGN

The design embodies the principles discussed earlier to achieve a final physical habitable space at the proposed location, with the said functions. Only computer rendered views of the proposed design has been incorporated as a part of this report due to the restriction of the presentation medium.



Proposal for Design School at Navi-Mumbai



15 CONCLUSION

The proposal presents a practical solution and vitalize a new industry for in India. It seeks to open up a new field of practice for a large part of the population, foster innovation and research and uplift the overall quality of life for the people. A project as such may be beneficial for the local population, the upcoming metropolis, the state and the entire country at large. On successful execution, it also holds the potential to make a mark on the international stage.

Architecturally, the proposal tries to give an enjoyable experience for the user, and at the same time ensure efficiency in management. The project understands the nature of the end-user will keep changing every year, and first attempts to aid the management in the task of running the operations of the institute.

For the execution it looks into the emerging new media in design and technology. Instead of providing a definite character and specific solution, the design proposes a frame-work approach, where the skeleton is provided and the designers which would inhabit the space can use and/or customize it as they seem appropriate. This also falls in tune with a similar trend rising in design practices and exemplifies the purpose and direction of the school.

16 APPENDIX A

FACULTY NORMS - PRESCRIBED BY AICTE FOR VARIOUS PROGRAMMES

(Engineering & Technology, Architecture, Planning, Pharmacy, MBA & MCA)

All India Council for Technical Education, New Delhi vide Notification F.No.37-3/Legal/2010 issued pay scales, Service conditions & qualifications for teachers and other academic staff in Technical institutions (Degree) Regulations, 2010.

- The regulations 2010 shall apply to technical institutions & Universities including Deemed Universities imparting Technical Education and such other course/ programmes and areas as notified by Council from time to time.
- There shall be only three designations in respect of teachers in Universities and colleges, namely, Assistant Professors, Associate Professors and Professors.
- No one shall be eligible to be appointed, promoted or designated as Professor, unless he or she possesses a Ph.D and satisfies other academic conditions, as laid down by the AICTE from time to time. This shall, however, not affect those who are already designated as 'Professor'.
- Faculty designated as Professors as on 05.03.2010 shall continue as Professors.
- The ratio of Professors to Associate Professors to Assistant Professors in a UG college shall be in the ratio, ordinarily of 1:2:6. The ratio of Professors to Associate Professors and or Assistant Professors in a PG college shall be in the ratio, ordinarily of 1:2.

A. FACULTY NORMS - PRESCRIBED BY AICTE

B. Architecture

Faculty required 1:10 (Teacher: student ratio)

Cadre ratio 1:2:6 (Professor: Associate Professor: Assistant Professor)

Programme	Cadre	Qualification	Experience
B. Architecture	Assistant Professor	Bachelors and Masters Degree in Architecture with First Class or equivalent either in Bachelors or Masters Degree	
	Associate Professor	Qualifications as above that is for the post of Assistant Professor, as applicable and PhD or equivalent, in appropriate discipline. Post PhD publications and guiding PhD students is highly desirable.	Minimum of 5 years experience in teaching / research /industry of which 2 years post PhD experience is desirable. In case of Architecture, Professional Practice of 5 years as certified by the Council of Architecture shall also be considered valid.
	Professor	Qualifications as above that is for the post of Associate Professor, applicable. Post PhD publications and guiding PhD students is highly desirable.	Minimum of 10 years teaching/ research /industrial experience of which at least 5 years should be at the level of Associate professor. or Minimum of 13 years experience in teaching and / or Research and /or Industry. In case of research experience, good academic record and books/ research paper publications /IPR/ patents record shall be required as deemed fit by the expert members of the selection committee. If the experience in industry is considered, the same shall be at managerial level equivalent to Associate Professor with active participation record in devising/ designing, planning, executing, analyzing, quality control, innovating, training, technical books/ research paper publications /IPR/patents, etc., as deemed fit by the

			expert members of the Selection committee. In case of Architecture, Professional Practice of 10 years as certified by the Council of Architecture shall also be considered valid.
--	--	--	--

M. Architecture

Faculty required 1:10 (Teacher: student ratio)

Cadre ratio 1:2 (Professor: Associate / Assistant Professor)

Qualifications as prescribed above

Note: Sanctioned students intake shall be considered for all (5) years in respect of UG and (2) years in respect of PG programmes for calculating Teacher: Student ratio.

Town Planning

Faculty required 1:10 (Teacher: student ratio)

Cadre ratio 1:2:6 (Professor: Associate Professor: Assistant Professor)

Programme	Cadre	Qualification	Experience
Town Planning	Assistant Professor	Bachelors and Masters Degree in Town Planning with First Class or equivalent either in Bachelors or Masters Degree	
	Associate Professor	Qualifications as above that is for the post of Assistant Professor, as applicable and PhD or equivalent, in appropriate discipline. Post PhD publications and guiding PhD students is highly desirable.	Minimum of 5 years experience in teaching / research /industry of which 2 years post PhD experience is desirable. In case of Architecture, Professional Practice of 5 years as certified by the Council of Architecture shall also be considered valid.
	Professor	Qualifications as above that is for the post of Associate Professor, applicable. Post PhD publications and guiding PhD students is highly desirable.	Minimum of 10 years teaching/ research /industrial experience of which at least 5 years should be at the level of Associate professor. or Minimum of 13 years experience in teaching and / or Research and /or Industry. In case of research experience, good academic record and books/ research paper publications /IPR/ patents record shall be required as deemed fit by the expert members of the selection committee. If the experience in industry is considered, the same shall be at managerial level equivalent to Associate Professor with active participation record in devising/ designing, planning, executing, analyzing, quality control, innovating, training, technical books/ research paper publications /IPR/patents, etc., as deemed fit by the expert members of the Selection committee. In case of Architecture, Professional Practice of 10 years as certified by the Council of Architecture shall also be considered valid.

M. Planning

Faculty required 1:10 (Teacher: student ratio)

Cadre ratio 1:2 (Professor: Associate / Assistant Professor)

Qualifications as prescribed above

Note: Sanctioned students intake shall be considered for all (4) years in respect of UG and (2) years in respect of PG programmes for calculating Teacher: Student ratio.

B. NON-TEACHING STAFF

The ratio of non-teaching (inclusive of administrative, ministerial, technical and other unskilled and semiskilled staff) to teaching staff should not exceed 3:1.

17 APPENDIX B

National Design Policy

17.1 BACKGROUND

Strategic importance of design for national and industrial competitiveness is now universally recognised. Value addition through innovations in designs can play a pivotal role in enhancing the competitiveness of both manufacturing and service industries.

2. Realising the increasing importance of design in economic, industrial and societal development and in improving quality of products and services, the Government of India had initiated a consultative process with industry, designers and other stakeholders to develop the broad contours of a National Design

Policy. The vision behind initiating a ‘National Design Policy’ is to have a “design enabled Indian industry” which could impact both the national economy and the quality of life in a positive manner.

17.2 VISION AND STRATEGY

3. The vision for a National Design Policy envisages the following:
- i. preparation of a platform for creative design development, design promotion and partnerships across many sectors, states, and regions for integrating design with traditional and technological resources;
 - ii. presentation of Indian designs and innovations on the international arena through strategic integration and cooperation with international design organizations;
 - iii. global positioning and branding of Indian designs and making “Designed in India” a by-word for quality and utility in conjunction with “Made in India” and “Served from India”; iv. promotion of Indian design through a well defined and managed regulatory, promotional and institutional framework;
 - v. raising Indian design education to global standards of excellence;

- vi. creation of original Indian designs in products and services drawing upon India's rich craft traditions and cultural heritage;
- vii. making India a major hub for exports and outsourcing of designs and creative process for achieving a design-enabled innovation economy;
- viii. enhancing the overall tangible and intangible quality parameters of products and services through design;
- ix. creation of awareness among manufacturers and service providers, particularly SMEs and cottage industries, about the competitive advantage of original designs;
- x. attracting investments, including foreign direct investments, in design services and design related R & D; and
- xi. involving Industry and professional designers in the collaborative development of the design profession;

The strategy to achieve this vision would focus on strengthening quality design education at different levels, encouraging use of designs by small scale and cottage industries and crafts, facilitating active involvement of industry and designers in the development of the design profession, branding and positioning of Indian design within India and overseas, enhancing design and design service exports, and creating an enabling environment that recognises and rewards original designs.

17.3 ACTION PLAN

4. The Action Plan for implementation of the National Design Policy will have the following components:

- (i) Setting up of specialised Design Centres or "Innovation Hubs" for sectors such as automobile and transportation, jewellery, leather, soft goods, electronics / IT hardware products, toys & games which will provide common facilities and enabling tools like rapid product development, high performance visualisation, etc. along with enterprise incubation as well as financial support through mechanisms like venture funding, loans and market development assistance for start-up design-led ventures, and young designers' design firms/houses.

- (ii) Formulation of a scheme for setting up Design Centres/Innovation Hubs in select locations / industrial clusters / backward states, particularly in the North East.
- (iii) Preparation of a plan for training of trainers and for organising training programmes in specific processes/areas of design and continuing education programmes for practising designers from Design Centres/Innovation Hubs.
- (iv) Preparation of a mechanism for recognising and awarding industry achievers in creating a brand image for Indian designs through the award of a India Design Mark on designs which satisfy key design criteria like originality, innovation, aesthetic appeal, user-centricity, ergonomic features, safety and eco-friendliness.
- (v) Encouraging Indian firms and institutions to develop strategic alliances with design firms and institutions abroad to gain access to technology and know-how improving Indian design.
- (vi) Creating mechanisms for sustainable quality improvement in designs in India.
- (vii) Laying special focus on up-gradation of existing design institutes and faculty resources to international standards, particularly the National Institute of Design (NID) and its new campuses/centres. With a view to spreading quality education in designs to all regions of India, four more National institutes of Design on the pattern of NID will be set up in different regions of the country during the 11th Five Year Plan. The possibility of new models for setting up of such institutes, in keeping with the current economic and educational paradigms, will be explored.
- (viii) Initiation of action to seek “Deemed to be University” or ‘University’ under section 3 (f) of the University Grants Commission Act, status for the NIDs, so that they can award degrees of B.Des. and M.Des. instead of just Diplomas as at present.
- (ix) Encouraging the establishment of departments of design in all the Indian Institutes of Technology (IITs) and all the National Institutes of Technology (NITs) as well as in prestigious private sector Colleges of Engineering and Architecture.
- (x) Upgrading quality of engineering design, machinery design, process design, design materials, environmentally sound and socially and culturally relevant designs.

- (xi) Encouraging the teaching of design in vocational institutes oriented to the needs of Indian industry, especially small scale and cottage industries in primary and secondary schools as well as tertiary educational institutions.
- (xii) Introducing short term training courses and continuing education programmes by NID and other design institutes targeting on needy sectors and catering to the diverse sectors including agricultural and artisanal sectors.
- (xiii) Organising workshops and seminars to create more awareness than at present among industrialists, particularly in small scale and cottage sectors, in different parts of India especially on the intangible aspects of design processes.
- (xiv) Sustaining and strengthening India's traditional knowledge, skills and capabilities while being sensitive to global heritage so that our shop floor workers, craftsmen and artisans could be engaged in manufacture of innovative products and contemporarisation of traditional crafts for broad spectrum of uses and niche markets.
- (xv) Facilitating the establishment of a Chartered Society for Designers, (on the lines of the Institution of Engineers, the Institution of Architects, the 'Medical council', the Bar Council, etc.), to govern the registration of Design Professionals and the various matters relating to standards setting in the profession.
- (xvi) Setting up an India Design Council (IDC) with eminent personalities drawn from different walks of life, in particular industry, whose functions, *inter alia*, would be as follows: -
 - ☞ undertake design awareness and effectiveness programmes both within India and;
 - ☞ act as a platform for interaction with all stakeholders;
 - ☞ undertake R&D and strategy and impact studies;
 - ☞ accredit design institutions;
 - ☞ develop and standardize design syllabi, etc. for all institutions in India imparting design education;
 - ☞ conduct programmes for continuous evaluation and development of new design strategies;
 - ☞ develop and implement of quality systems through designs for enhancing the country's international competitiveness;

- ☞ coordinate with Government to facilitate simplification of procedures and systems for registration of new designs;
- ☞ assist industries to engage the services of designers for their existing and new products;
- ☞ encourage design and design-led exports of Indian products and services including outsourcing its design capabilities by other countries;
- ☞ take effective steps towards “cradle to grave environment-friendly approach” for designs produced in India so that they have global acceptance as ‘sustainable designs’;
- ☞ enable the designers in India to have access to global trends and market intelligence and technology tools for product development and innovations;
- ☞ encourage close cooperation between academia and industry to produce proprietary design know-how while encouraging creation of new design-led enterprises for wealth creation; and
- ☞ encourage and facilitating a culture for creating and protecting intellectual property in the area of designs.

18 BIBLIOGRAPHY

- Chen, Wenwen , and Zhuozuo He. 2013. *The Analysis of the Influence and Inspiration of the Bauhaus on Contemporary Design and Education*. Shanghai: Shanghai University of Engineering Science.
- Confederation of Indian Industry. n.d. "India Design Report." Mumbai.
- Deloitte. 2012. *Indian Higher Education Sector: Opportunities aplenty, growth unlimited!* Deloitte.
- Deloitte. 2013. *Perspectives on Skill Development in Maharashtra*. Deloitte.
- Eames, Charles and Ray. 1958. *The India Report*. Ahmedabad: National Institute of Design.
- Ernst & Young, Inc. 2011. *Spotlight on India's entertainment economy: Seizing new growth opportunities*. Ernst & Young, Inc.
- Federation of Indian Chambers of Commerce and Industry. 2012. *Higher Education in India: Twelfth Five Year Plan(2012-2017) and beyond*. Kolkata: Ernst & Young Pvt. Ltd.
- icongrada IDA. 2011. *World Design Survey*. Seoul: Oh Se-Hoon (Mayor of Seoul Metropolitan City Government).
- IDC, IIT Bombay. 1989 (updated 2009). *Design as a Strategy for a Developing Economy*. Mumbai: IDC, IIT Bombay.
- International Colored Gemstone Association. 2011. "Brazil Jewellery Industry Report." Rio de Janeiro.
- Koshy, Dr. Darlie O. 2011. "Importance of Design as a Factor of Competitiveness." *WIPO International Symposium on Design*. Santiago, Chile.
2014. *Maharashtra*. April 16. <http://en.wikipedia.org/wiki/Maharashtra>.
- McKinsey & Company, Inc. 2009. *Building India: Accelerating Infrastructure Projects*. New Delhi:: Magnum Custom Publishing.
- Raulik, Murphy. 2008. *A Comparative Analysis Of Strategies For Design In Finland And Brazil*. Sheffield : Sheffield Hallam University.

Sehgal, Vikas , Kazutoshi Tominaga, and Sunil Sachan. 2010. *Globalization of Japanese Engineering Research and Development - Option or Imperative?* Booz & Company.