

WELCOME

Project Range

All India



Triveni Solar Glass Factory

Rajahmudhry, Andhra

Ongoing

Design and Project Management







Taj Fateh Prakash Palace

City Palace, Udaipur

Architecture, interiors, lighting design, furniture design



Taj Fateh Prakash Palace

City Palace, Udaipur

Architecture, interiors, lighting design, furniture design



Taj Gorbandh Palace Hotel

Taj Hotel, Jaipur

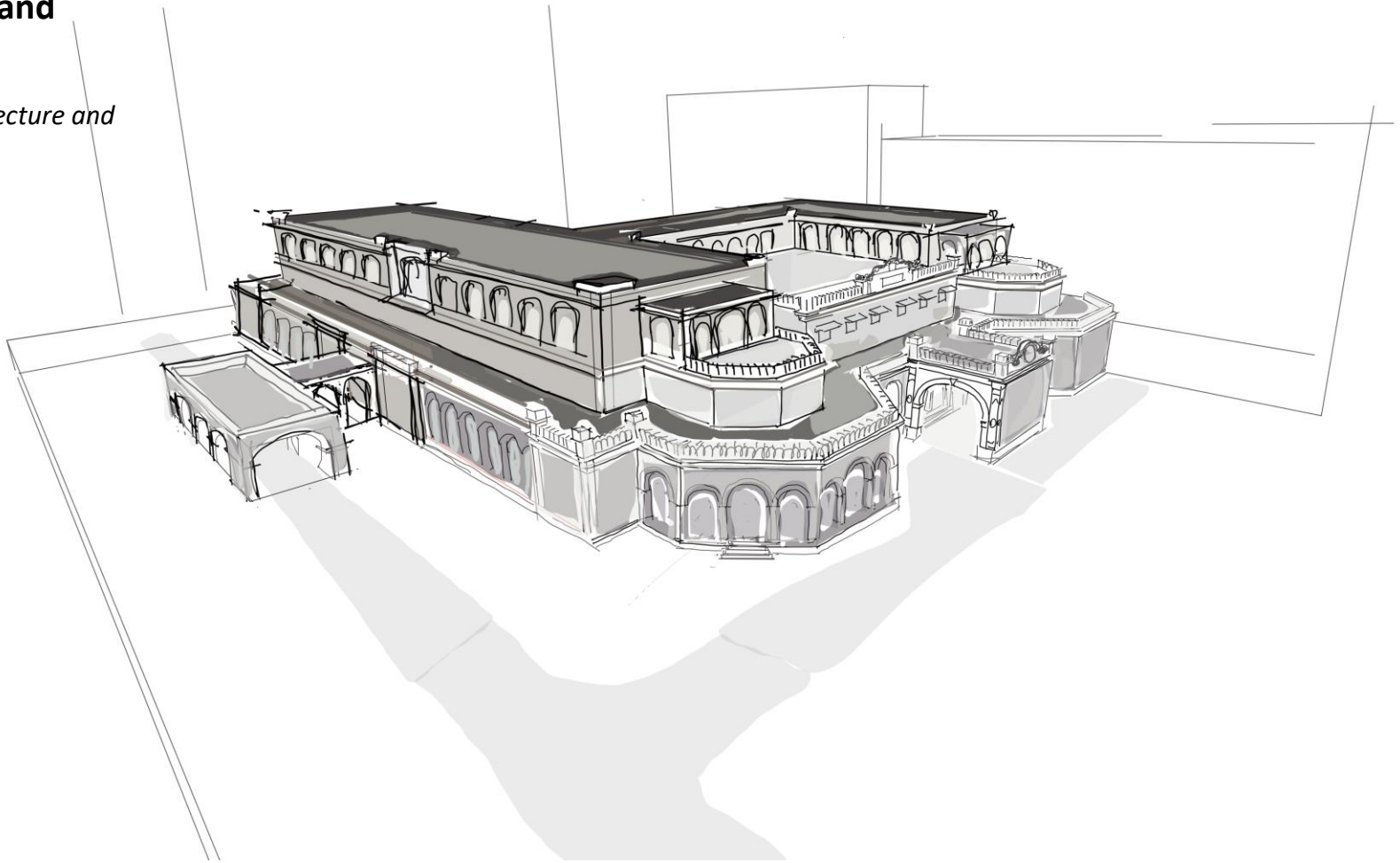
Architecture, Design and Project Management



Hotel Harsh Anand

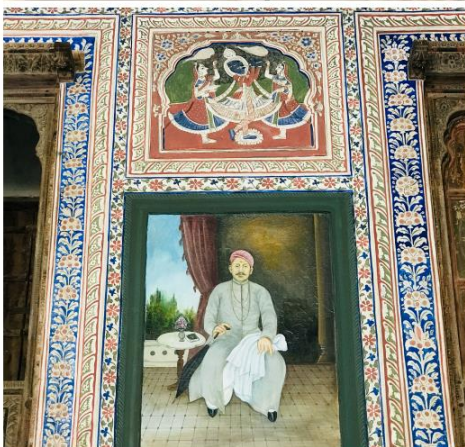
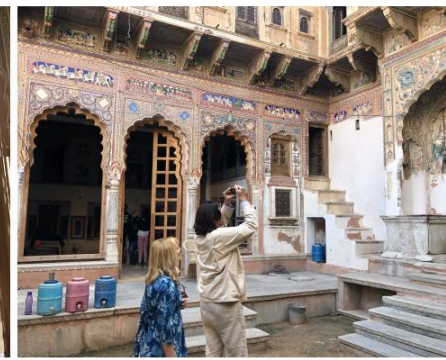
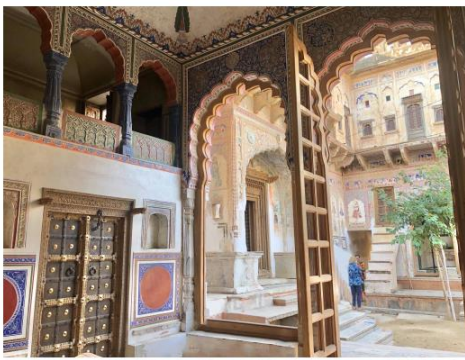
Prayagraj

*Conservation, Architecture and
interior design*



Hotel at Mandawa

Adaptive reuse,
Conservation, Architecture,



High Street Retail

Connaught Place
B-Block Connaught Place
Imperial Hotels

*Adaptive Reuse, Expansion,
Architecture, Interiors*



Taj Fateh Prakash Palace

City Palace, Udaipur

*Project Management and
design coordination*



Viceregal Lodge

Summer Hill, Shimla

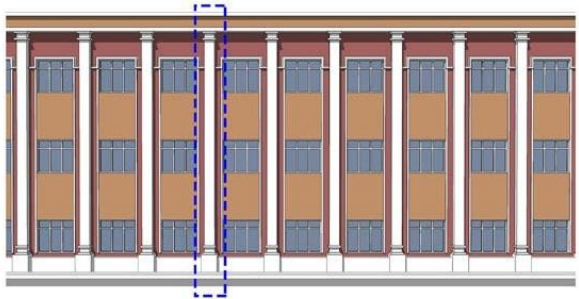
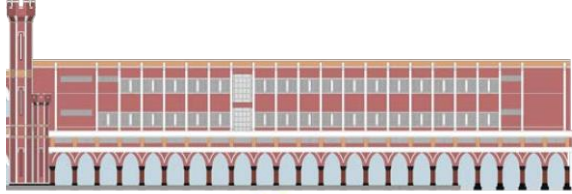
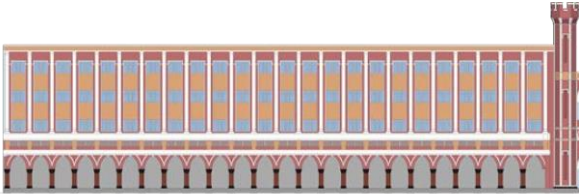
*Architecture, conservation,
design and project
management*



Delhi Railway Station

Delhi

Conservation, Renovations



Ajmer Railway Station

Delhi

Architecture, Improvement



Kalka-Shimla Rail
Shimla

Personal experience



Elevator at Red Fort
Architecture



Temple
Udaipur

Architecture and design



Street revitalization,
Old City Jaipur

*Architecture, design and community
engagement*



J.S Akoi House

2 KG Marg

*Conservation, Expansion,
Architecture, Interiors*



J.S Akoi House

2 KG Marg

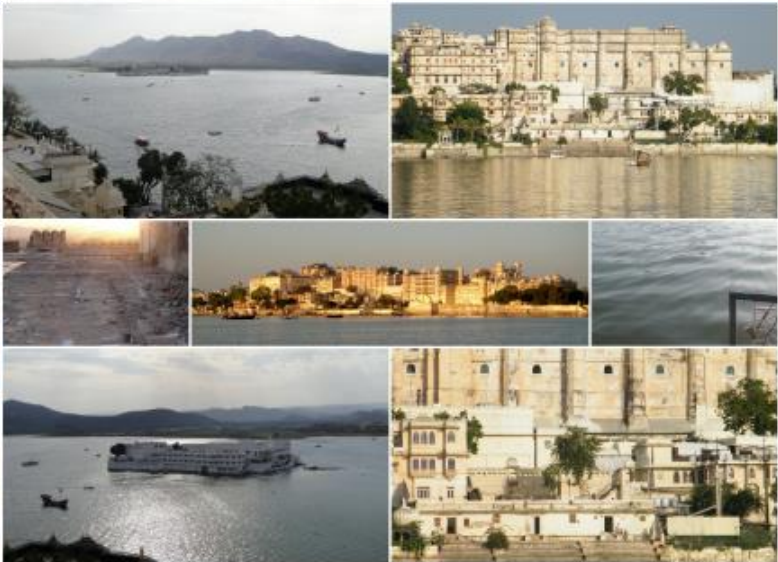
*Conservation, Expansion,
Architecture, Interiors*



Conservation

All India

Architecture, design, project management



Bir Terraces

Uttarakhand

Architecture and interiors



Ann house

Uttarakhand

Architecture and interiors



Express Towers
Nariman Point, Mumbai

*Conservation, Architecture
and Project Management*





Project Range – 2

All India

Bloomrooms

Janpath, New Delhi

Architecture, Interiors



Bloomrooms

Bengaluru

Architecture, Interiors



Bloomrooms

Delhi

Architecture, Interiors



Bloomrooms Boutique

Amritsar

Architecture, Interiors



Ginger Hotels

Architects, Project Managers,
Design and Build, Multiple
locations

Architecture, design and build



Residence at EoK

New Delhi

Architecture, design and build



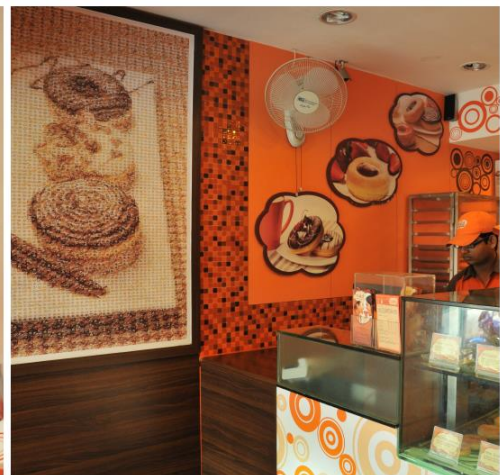
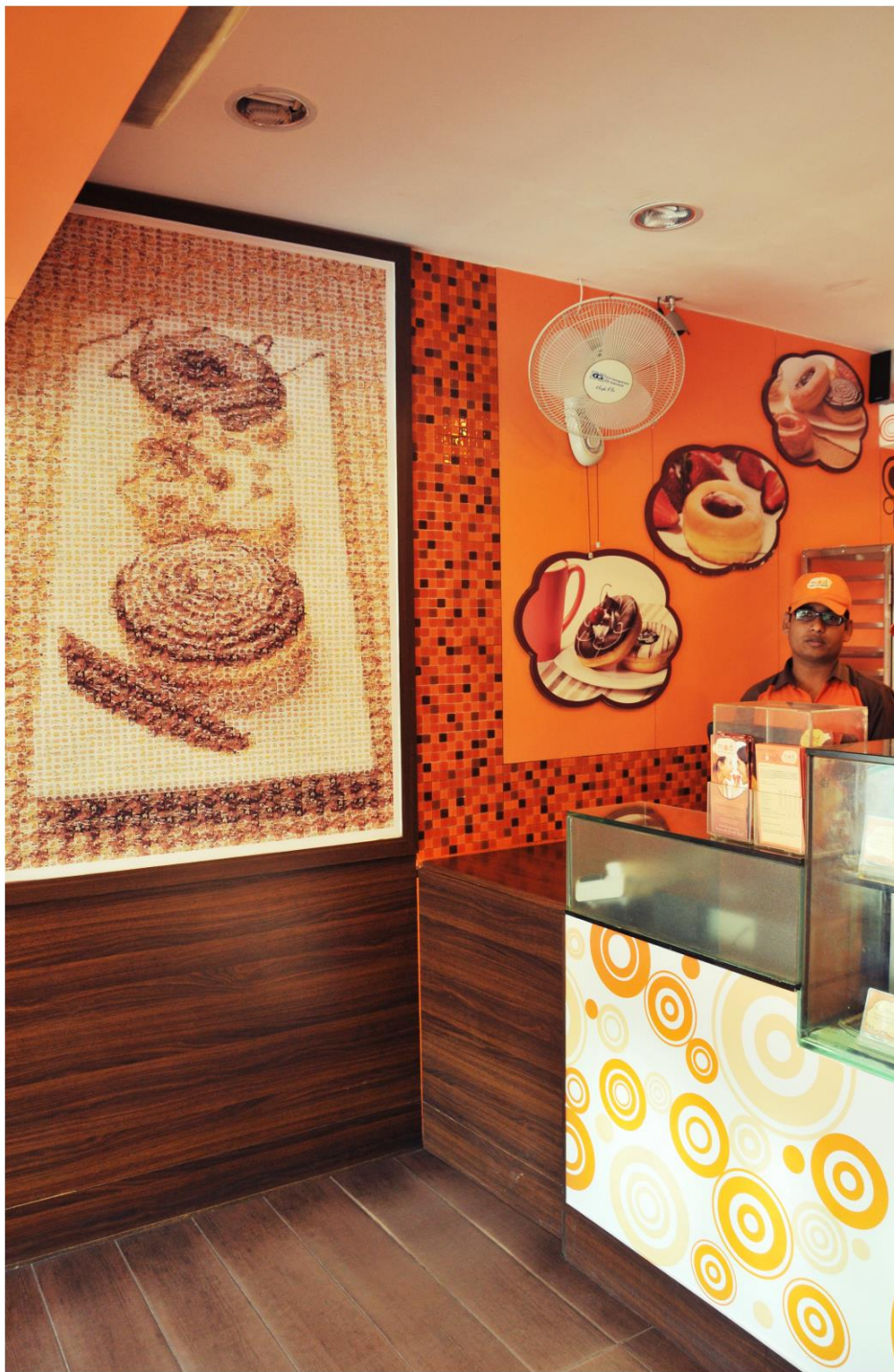
Lakshmi Glass
Delhi

Architecture, design and build



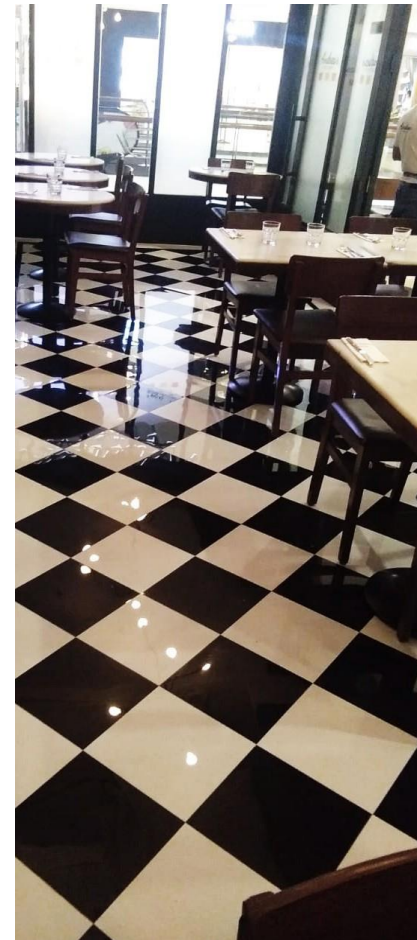
Mad Over Donut
New Delhi

Interior Design and D&B



**Andrea's Bar and
Brasserie**
Khan Market New Delhi

Interior Design



**Andrea's Bar and
Brasserie**

Khan Market New Delhi

Interior Design



**Andrea's Bar and
Brasserie**
Khan Market New Delhi

Interior Design



Sagar Ratna
Ambience Mall, Gurugram

Interior Design





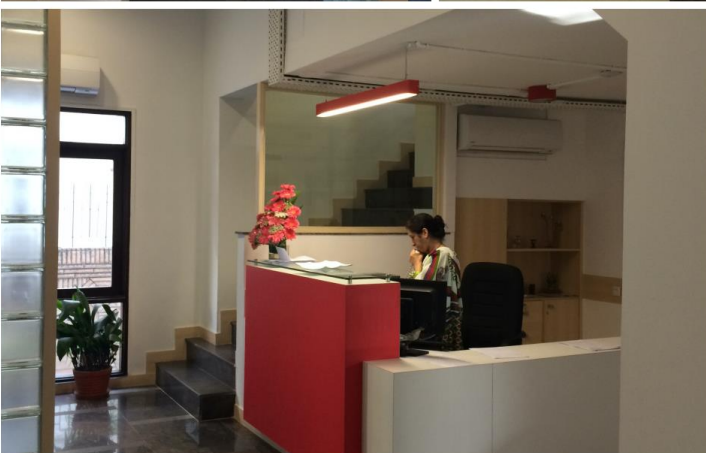
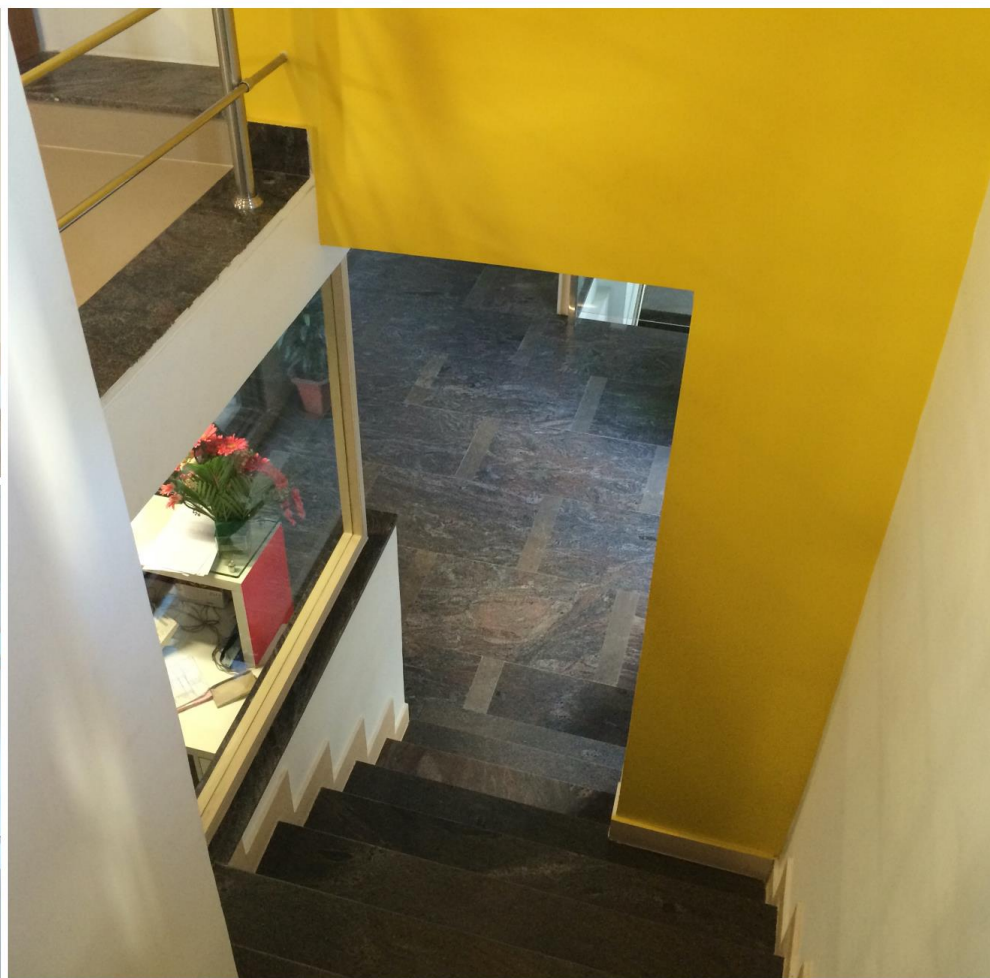
MD office
Delhi

Architecture and design



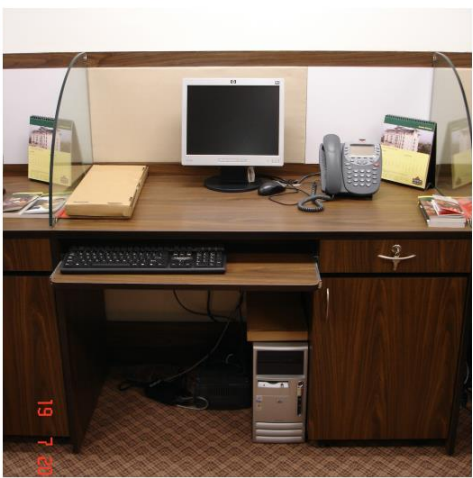
International Red Cross
Delhi

Architecture, design and build



Radisson Call Centre
Gurgaon

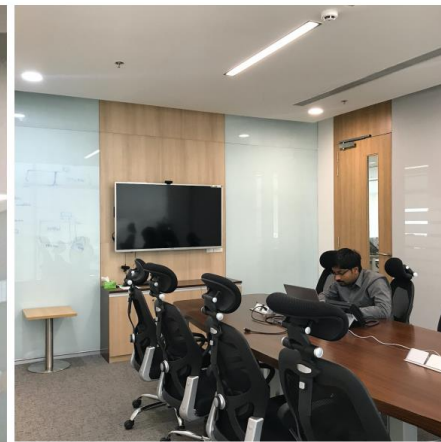
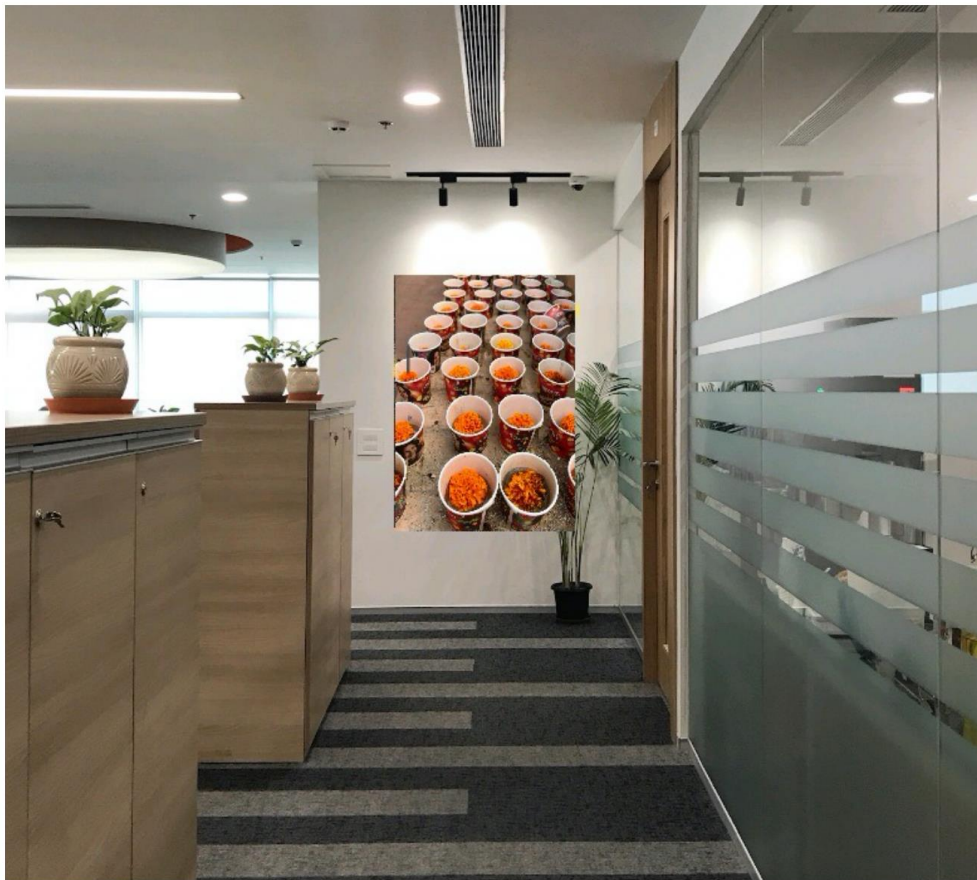
Architecture, design and build



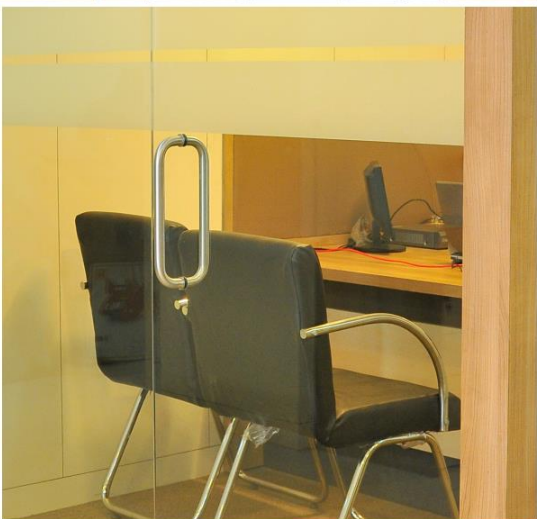
Sun Renewables

Gurgaon

Design and build



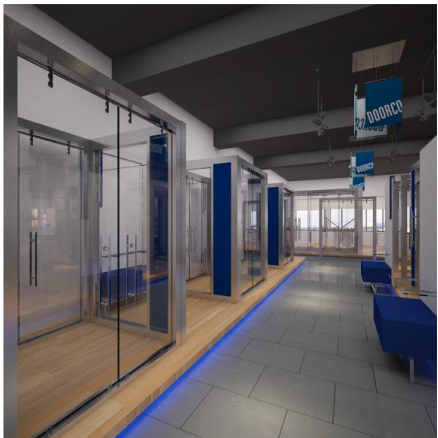
Architecture, design and build



Bank Branches
All India

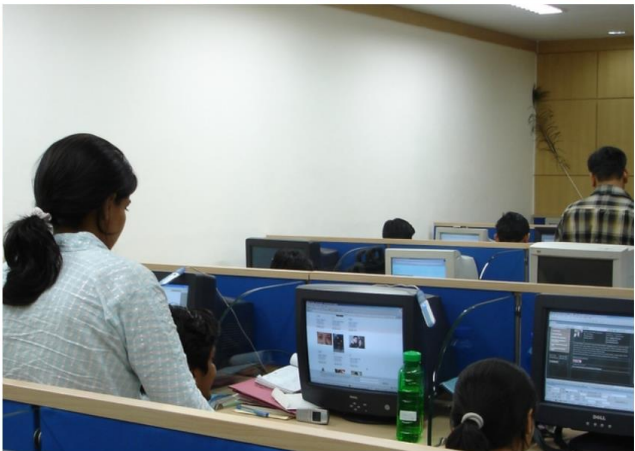
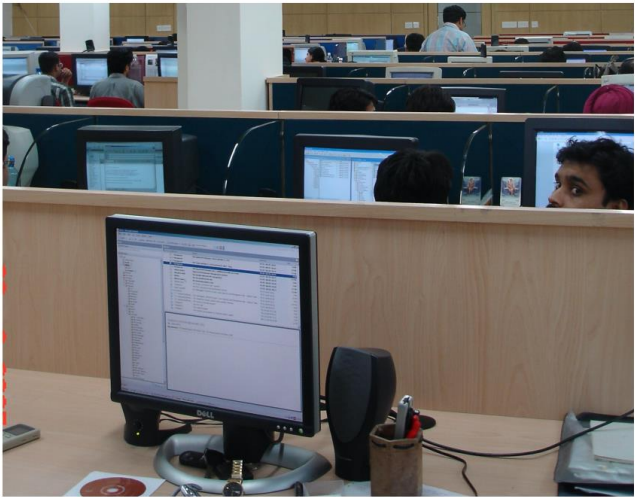
Design and Build





Synapse India
Noida

Architecture and design



Asian Paints
All India

*Architecture, project
management*



Retail Stores

Delhi

Architecture, design and build



Retail Stores

All India

Architecture, design and build



Hotels

ITC-WelcomHotel,
Amritsar

Project Management



Grand Hyatt
Bolgatty Island, Kochi

*Risk management and
valuation*



JW Marriott
Kolkata

Project Management

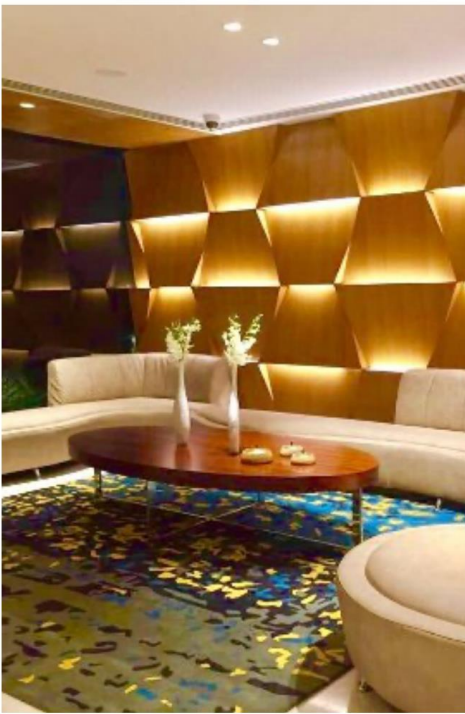


Taj Theog

Himachal Pradesh

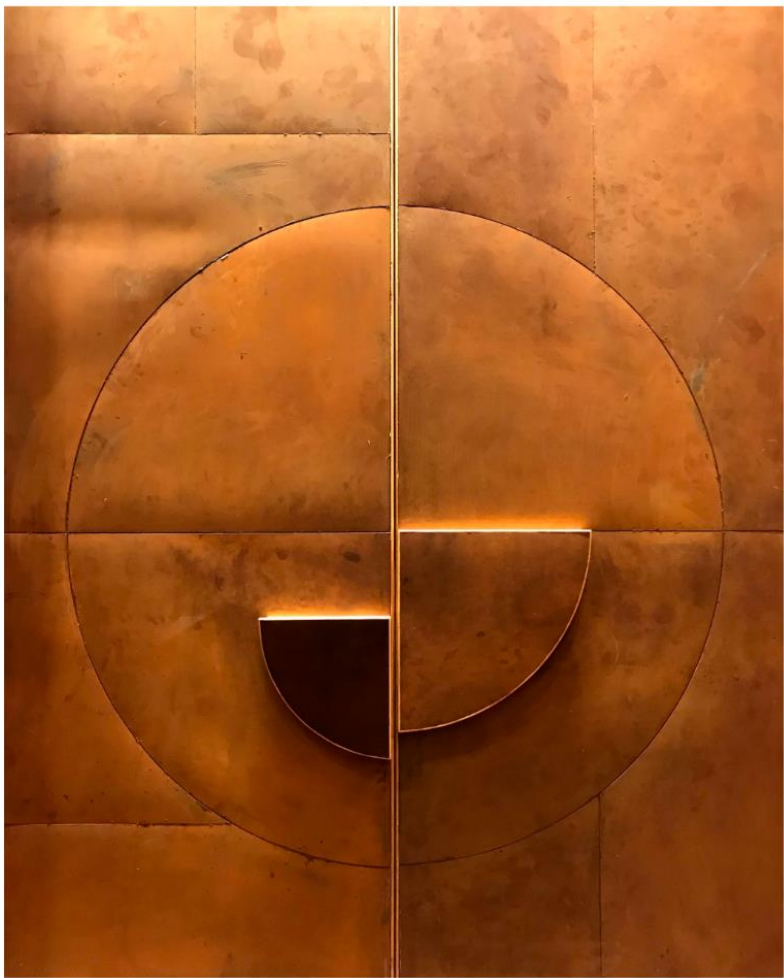
Project Management





Alila Diwa
Goa

Project Management



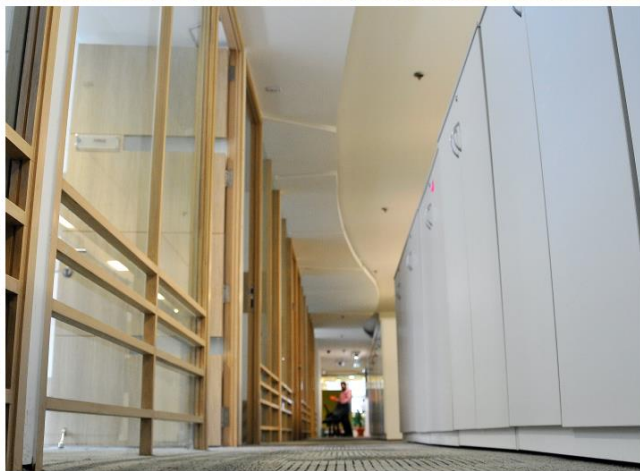
Residence Project Management



Pentair Head office

Noida

Project Management



**Secondary
School:**
GRES, Lakhimpur

Architecture and design



School

HRM Global School,
Delhi

Project Management



Cancer Hospitals
Tata Trusts
Jamshedpur and Jaipur

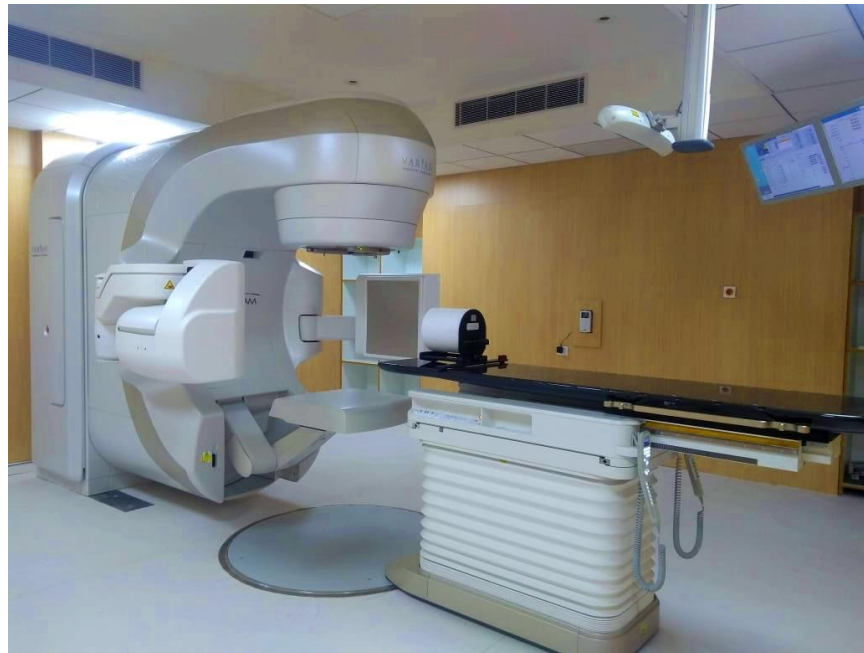
Project Management



Cancer Hospitals

Tata Trusts
Jamshedpur and Jaipur

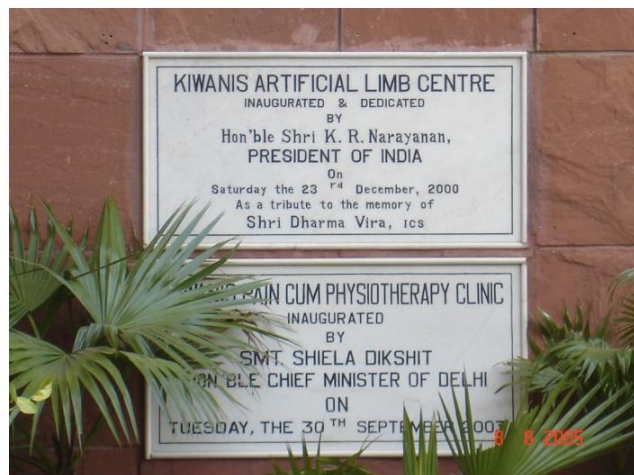
Project Management



Artificial Limb Centre

New Delhi

Architecture and design



Status by Achievers

Faridabad

Architecture



Gardenia by Achievers

Faridabad

Architecture



City Square Mall

Ajmer

Architecture and Project Management



Commercial:
81Avenue, Gurugram

*Architecture and
design*



Misc
All India

Architecture and design



Advocacy and writing



शहीद भवन निर्माण में बाधा बुराहा को भवन में रखकर स्टाफ के इस्तेमाल के लिए उचित मापदंडों की आवश्यकता है। बा. बन्सो है कन्फेडरेशन ऑफ कन्स्ट्रक्शन प्रोडक्ट्स एंड सर्विसेज (सीसीपीएस) के मास्टर सेक्टरल डायरेक्टर लौक नितान्त का, जोकि पुष्कर को सेंटर 33 स्थित श्रीकांत बाबाकार के लोक निर्माण विभाग में इंजीनियर एक कार्यवाही में आज प्रतिनिधियों को संबोधित कर रहे थे।



Bylaws on glass use in bldgs

JDA will soon forward proposal to govt regarding rules on use of glass in residential and commercial constructions

DNA Correspondent

The Jaipur Development Authority (JDA) will soon forward a proposal to the state government regarding drafting of bylaws on the use of glasses, ensuring safety of people in residential and commercial buildings.

The Confederation of Construction Products and Services (CCPS) on Wednesday organised a workshop for JDA officials. Representatives of the confederation suggested bylaws regarding the use of glass. The JDA has decided to go through the bylaws and ask the state government to frame new bylaws.

Loknath Soni, secretary JDA, said the JDA has accepted the proposal and decided to forward it to the government. "Safety is necessary while using glasses in buildings. We have accepted their proposal and forward it to the state government," said Soni. If the suggested bylaws are added to the existing building bylaws, then accidents involving big glasses will certainly see a drop.

Confederation representatives said types of glasses and their location are primary cause of accidents in Jaipur. "Most commercial buildings in Jaipur don't use the prescribed glasses. For example, many use tempered glass instead of laminated glass"



The Confederation of Construction Products and Services says types of glasses and their location are primary cause of accidents in Jaipur. —Pic for representational purpose only

force the bylaws in Jaipur," said Deepak Gehlot, convener of the confederation. Disaster management experts, too, suggested that bylaws on the use of glass

in buildings causes difficulty in controlling fire. "Fire engulfed a media firm building recently. We tried to breach the glass of the

of Lal Jat, chief fire officer, Jaipur. Jat said firemen also faced problems while breaking the glass windows of the LIC building which was engulfed by fire those times ago. —Photos: Rediff

कांच के इस्तेमाल पर कानून बनाने की मांग

नई दिल्ली। भवन निर्माण में इस्तेमाल होने वाले कांच का इस्तेमाल खतरनाक हो सकता है। इसी को ध्यान में रखकर कंफेडरेशन ऑफ कंस्ट्रक्शन प्रोडक्ट्स एंड सर्विसेज ने सरकार को इसके खिलाफ कड़े कदम उठाने की मांग की है। केंद्रीय लोक निर्माण विभाग के पूर्व अधिकारी व कामनवेल्थ गेम्स भवन निर्माण के सलाहकार डी. एस सचदेवा ने संवाददाता सम्मेलन में कहा कि राजधानी में मॉल्स, कार्मार्शियल कॉम्प्लेक्स, होटल, एयरपोर्ट आदि में काफी तादाद में कांच का इस्तेमाल किया जा रहा है। लेकिन इसके कोई नियामक सरकार ने नहीं तय किए हैं। भवन निर्माण विधेयक जीएनए सत्रों में अजमाए कि जो रूलिंग निर्देशों की जांच के अंतर्गत

Let there be light

Domestic harmony depends on a natural thing like light, say experts. ASUQ Designers write about a lighting competition that took place recently

When the sun sets, the lights go on. It's a simple truth, but one that is often overlooked in the design of our homes. A competition was held recently to create a lighting design that would not only illuminate a space, but also create a sense of harmony and well-being. The winning design was a simple one, using natural light to its fullest extent. It was a reminder that sometimes the best solutions are the simplest ones.

Through the glass c painfully

Maharashtra Times | 1981

When Ahmed visits a mall he moves around with a slow step. It's not that the 35-year-old businessman is short-sighted, but he is wary of barreling through an ultra-clear glass door, the invisible kind that melts eyes in blunts in South India. "I have presence of mind, but looks can be deceiving," says Ahmed. "I walk carefully inside malls and complexes that have sliding glass windows, translucent partitions and trouble-free glass doors, since the speed at which you walk determines the extent of injury I know from experience."

Glass is one of the vanities of modern architecture, but it's the most duplicitous one. There have been innumerable cases of people suffering from deep cuts and scratches, to say nothing of shattered nerves, after marching straight into plate-glass in restaurants, museums and shops. Referral to an 'walk-through injuries', medical experts say that these collisions with glass usually cause damage to facial soft-tissue, which can be both dangerous and disfiguring.

According to Deepak Gahlot, architect and convener of The Confederation of Construction Products and Services (CCPS), an estimated 30,000 people across the world, most of them disabled, suffer from injuries sustained from glass furniture. "Many countries have made it mandatory to use safety glass (non-brittle glass) in critical locations and also require that the glass be manifested," Many London restaurants for instance have a white sheet of paper pasted on the glass pane with the words 'Don't walk into me'.

There was no such statutory warning at the City church that Co-Jaha resident Anna David had a painful encounter with. A regular parishioner, David had grown so familiar with its corridors, little windows and doors that she began to glide through the church almost mindlessly. "My confidence suffered a major blow when, some first, I dashed into a newly installed glass door," recalls David, who was so embarrassed that she quickly covered her smarting nose with a handkerchief and stumbled away. It took a few days for the church authorities to realise that it wasn't just hapless sparrows that were going splat.

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with Impresario India. 7 pm onwards.

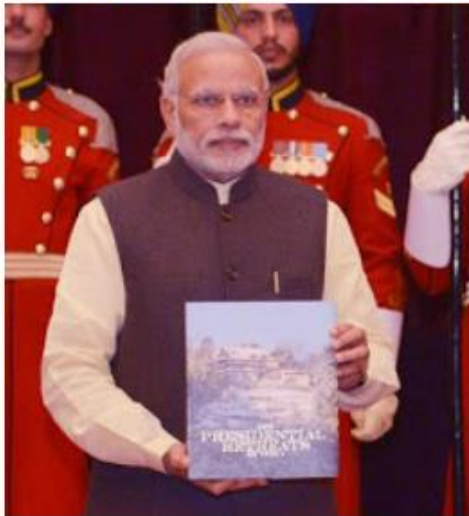
EVENTS

Session on bedroom design tips by architect and interior designer Deepak Gahlot at HomeTown, The Great India

H.B. Sahana performs at the Chinmaya Mission Auditorium today

Book release

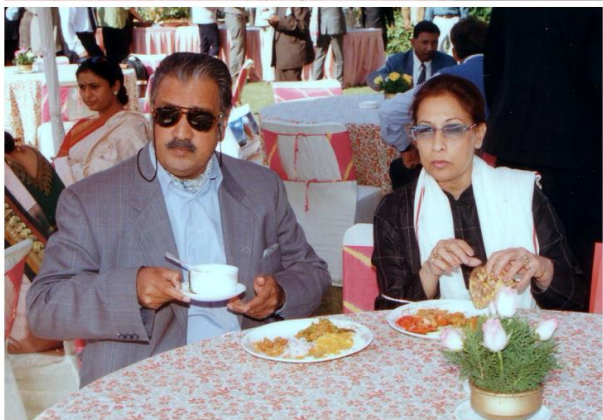
Personal experience



Workshop on conserving heritage in developing metros

Jaipur

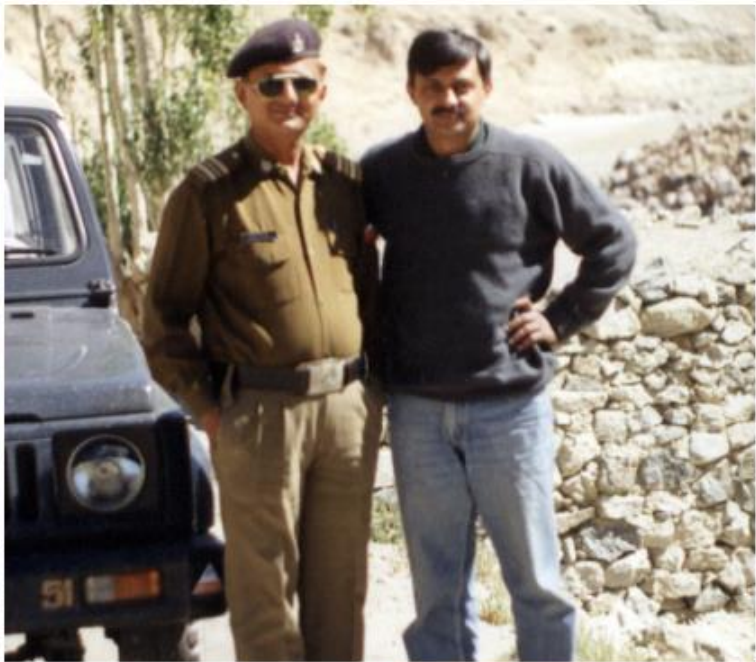
Personal experience



Border roads

Ladakh

Personal experience

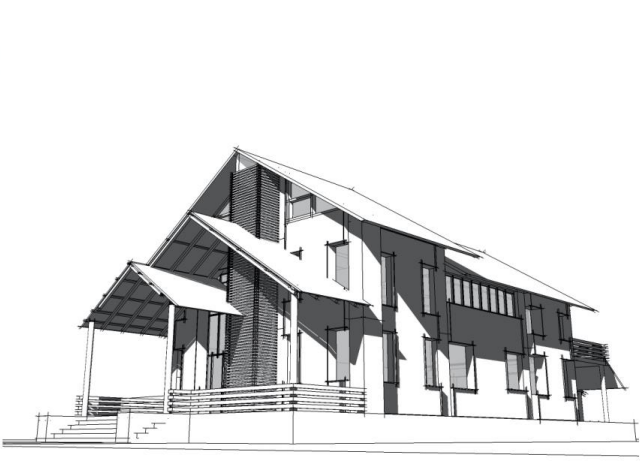
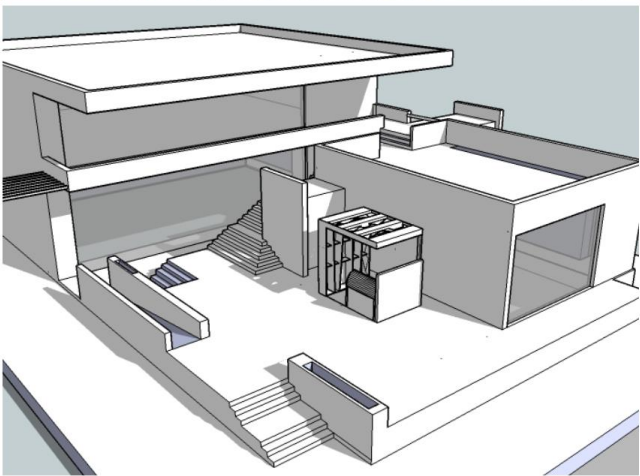
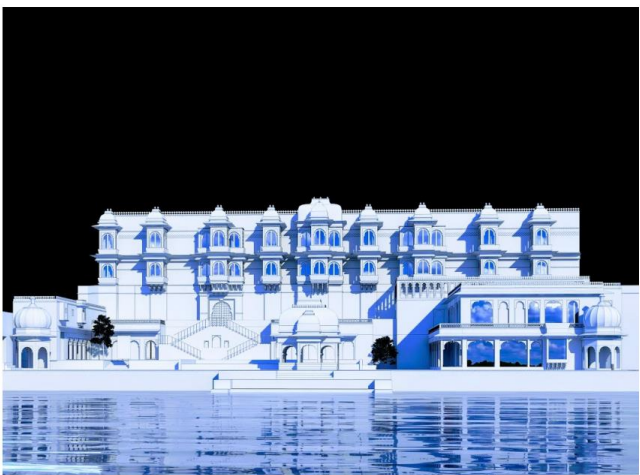
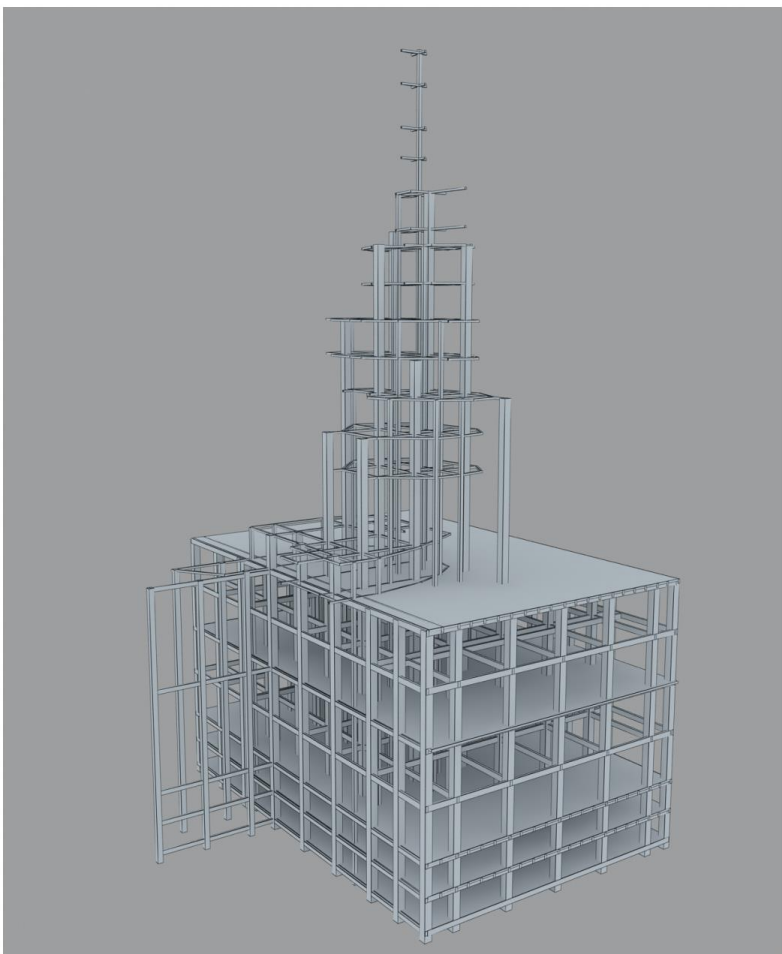


Processes and systems

Project Studies

All India

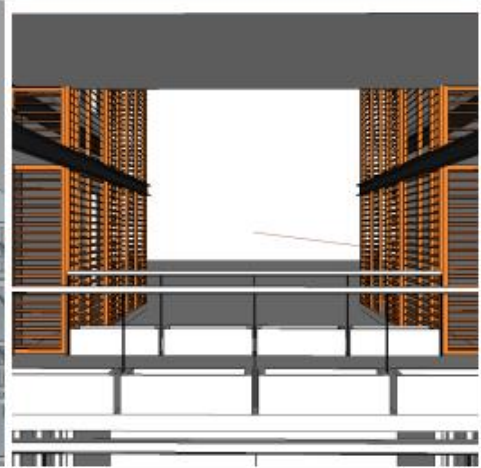
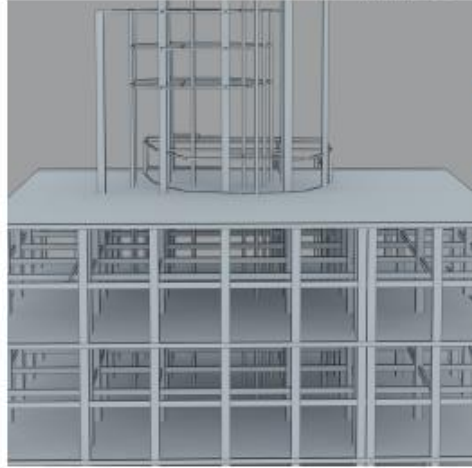
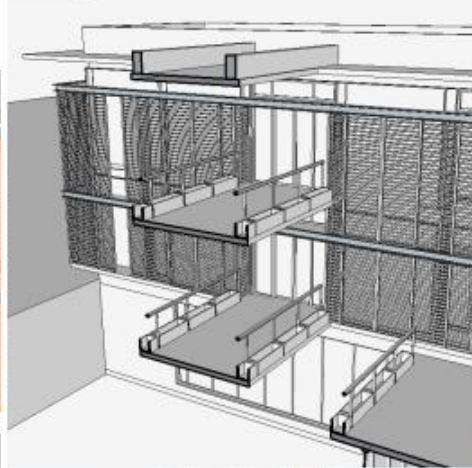
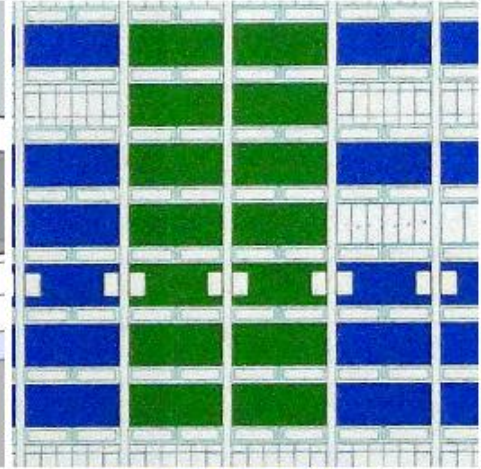
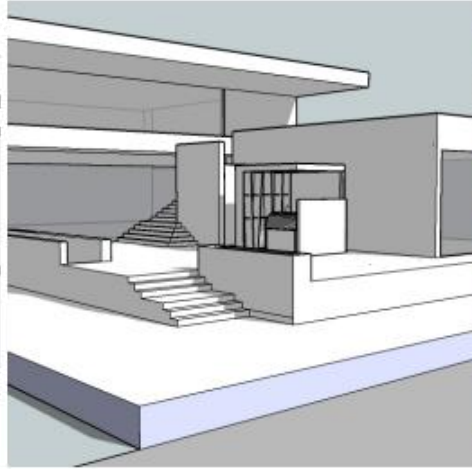
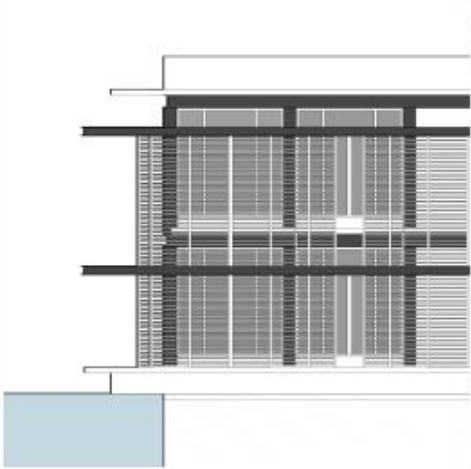
*Design and coordination
methods*



Project Studies

All India

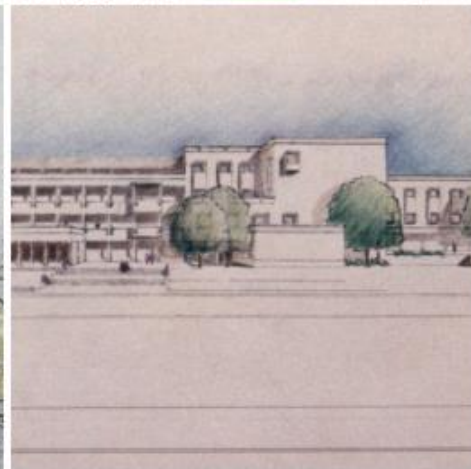
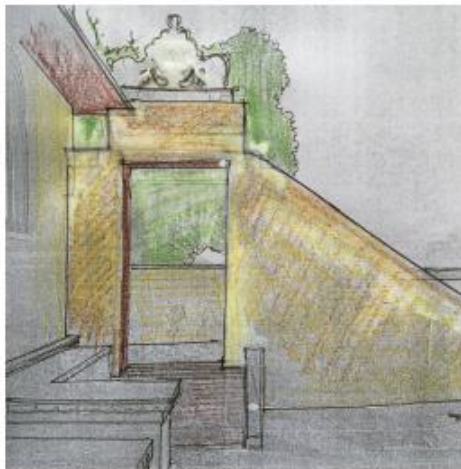
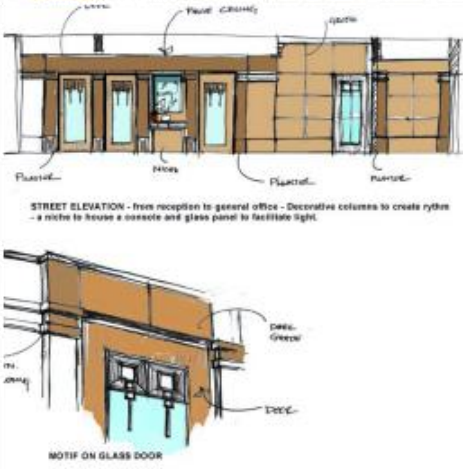
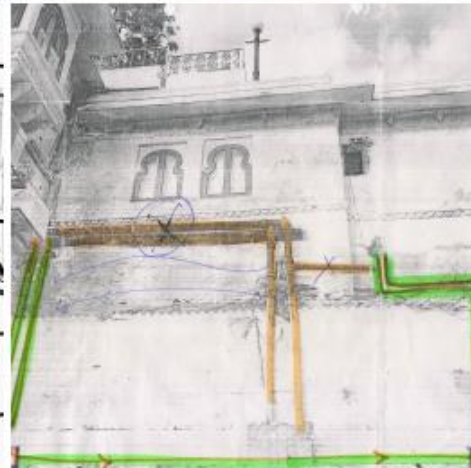
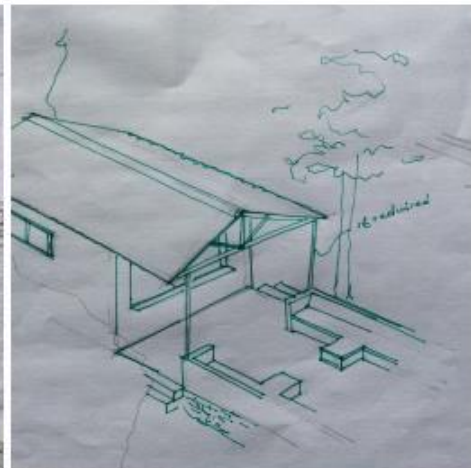
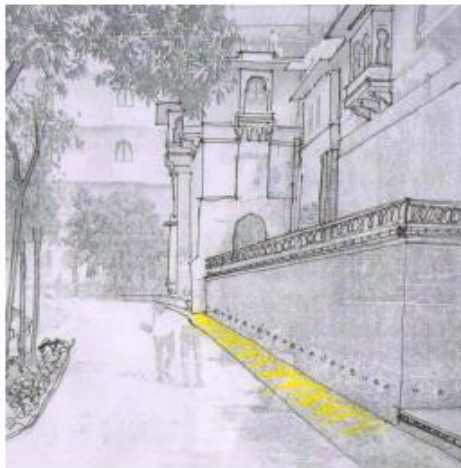
Design and coordination
methods



Project Sketches

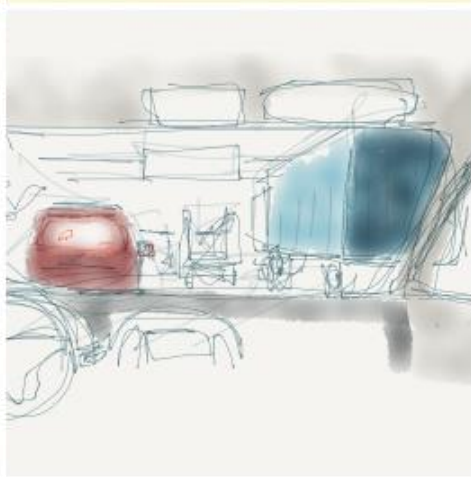
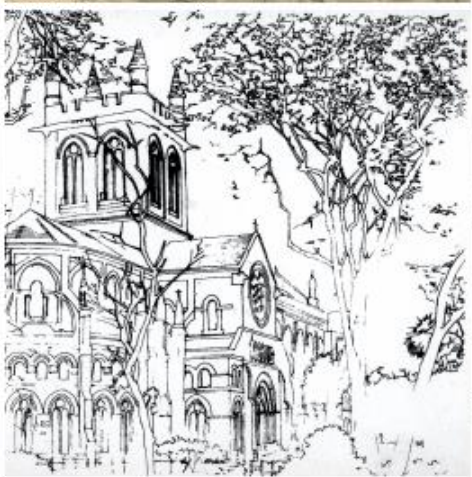
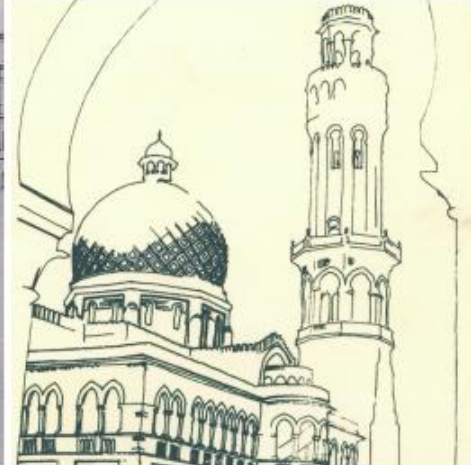
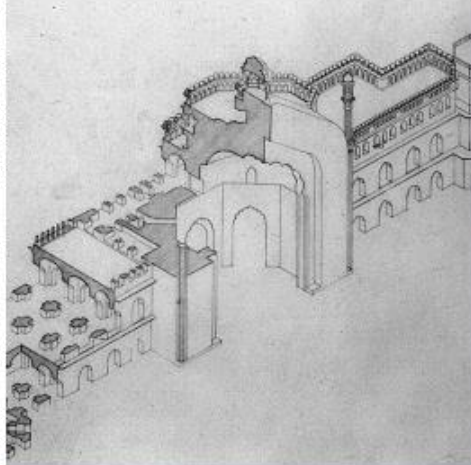
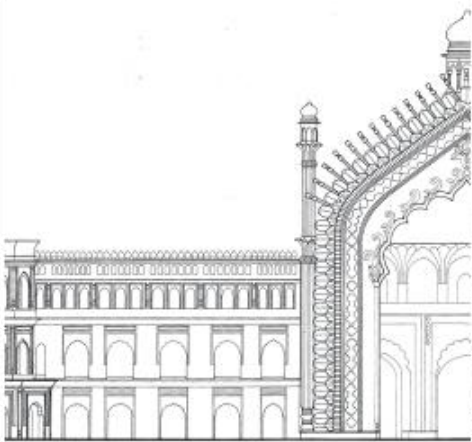
All India

Design and coordination
methods



General Sketches

*Design and coordination
methods*



207, Nuchna Tower, Second floor
Alaknanda Commercial Complex
New Delhi 110019, India

Phone +911149513300-09

Xebec Design

Xebec Property Management Pvt Ltd

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www.xebecdesign.com



Air quality

The All-India Glass Manufacturers' Federation

Deepak Gahlowt, Architect, 17 June 2023, Ahmedabad



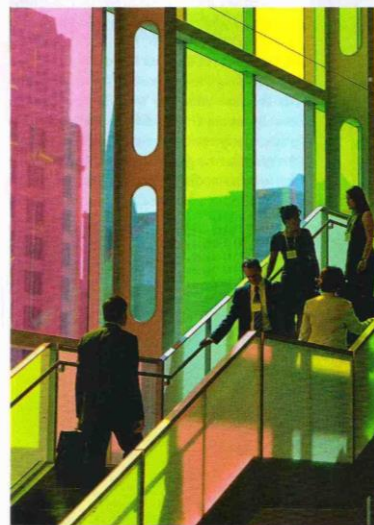


SAFETY IN THE USE OF GLASS

Glazing, while popular, brings in its wake human safety requirements. The risk of injuries from falls and the danger of falling glass, have led to the need for suitable product design to counter the vulnerability of glazing. The Confederation of Construction Products and Services (CCPS) with the support of the glass industry, has recently released the "Guidelines on the Use of Glass in Buildings for Human Safety" for specialists and homeowners alike.

NEED TO KNOW:

- Besides the visual appeal of glass, offered in clear, tinted, coated, frosted, decorative and mirror forms, glass is also tested for its safety quotient by a gruelling shock test, fragmentation test, warp test, boil test, light stability test, and fracture and adhesion test, in accordance with IS 2553.
- It is also necessary to note that only when glass is laminated with polyvinyl butyral (PVB) can it qualify as safety glass. Also,



इमारतों में कांच का इस्तेमाल हो उचित मानक से

हरियाणा सरकार के लोक निर्माण विभाग की तरफ से कांच के इस्तेमाल पर कार्यशाला आयोजित

प्रमुख संवाददाता | चंडीगढ़

भवन निर्माण में मानव सुरक्षा को ध्यान में रखकर कांच के इस्तेमाल के लिए उचित मापदंड अपनाए जाने की जरूरत है। कॉन्फेडरेशन ऑफ कंस्ट्रक्शन प्रोडक्ट्स एंड सर्विसेज (सीसीपीएस) के मानद संयोजक आर्किटेक्ट दीपक गहलोट ने यह बात कही। वे बुधवार को सेक्टर-33 स्थित हरियाणा सरकार के लोक निर्माण विभाग कार्यालय में आयोजित कार्यशाला में विचार रख रहे थे। उन्होंने कहा कि देश में चमक-दमक के मौजूदा माहौल में इमारतों,



चंडीगढ़. निर्माण सदन सेक्टर-33 में कार्यशाला के दौरान प्रतिभागों।

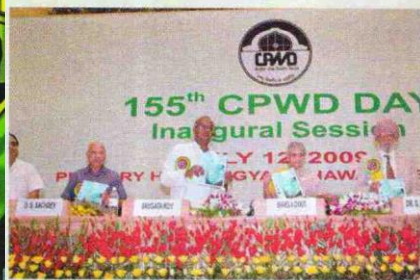
मॉल, कर्माश्रयल कॉम्प्लेक्स, शैक्षिक संस्थानों, होटलों, अस्पतालों और अब आवासीय भवनों में कांच का इस्तेमाल कई गुना बढ़ गया है। 2000-01 में कांच की अनुमानित बिक्री 886 मिलियन टन रोजाना थी

जो अब बढ़कर 3400 एमटी पर पहुंच गई।

कार्यशाला में बताया गया कि ब्यूरो ऑफ एनर्जी एफिशिएंसी द्वारा तैयार एनर्जी कंजर्वेशन बिल्डिंग कोड (ईसीबीसी) 2007 के तहत बाहरी दीवारों, छत, कांच खंभों, लाइटिंग, हीटिंग, वेंटिलेशन और कर्माश्रयल बिल्डिंग में एयर कंडीशनिंग के लिए न्यूनतम दक्षता मानक निर्धारित किए गए हैं। यह कदम ऊर्जा संरक्षण के संदर्भ में अच्छे शुरूआत है। लेकिन इसान के घायल होने का जोखिम कांच के बढ़ती इस्तेमाल की वजह से गहरा गया है।

GUIDELINES ON USE OF GLASS IN BUILDINGS

Central Public Works Department (CPWD), along with Confederation of Construction Products and Services (CCPS), a non-profit organization working for the sustainable growth of the construction products sector, has developed "Guidelines on Use of Glass in Buildings — Human Safety". The guidelines were released on 12th July 2009 on the occasion of the 155th CPWD Day at Vigyan Bhawan, New Delhi. Present at the event, were Delhi Chief Minister Shiela Dixit (chief guest) and Minister of State for urban development Saugata Roy (guest of honour), among other dignitaries. These guidelines



are aimed at ensuring the safe use of glass in critical locations, ie areas where the chances of injury due to glass breakage is high. They have been developed through a public-private partnership by adopting the consensus approach involving all stakeholders, including architects, engineers, key municipalities and other government departments, etc.

SPORT
Sambhir
Jat for
ODI tour
PAGE 14

more 4 pages

DNA PINK CITY

DNA
DAILY NEWS & ANALYSIS

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JAIPUR | THURSDAY, MAY 26, 2011

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AFTER HR:
DNA gives yc
the low-down
on trendy ba
4 PAGES

Bylaws on glass use in bldgs

JDA will soon forward proposal to govt regarding rules on use of glass in residential and commercial constructions

DNA Correspondent

The Jaipur Development Authority (JDA) will soon forward a proposal to the state government regarding drafting of bylaws on the use of glasses, ensuring safety of people in residential and commercial buildings.

"The Confederation of Construction Products and Services (CCPS) on Wednesday organised a workshop for JDA officials. Representatives of the confederation suggested bylaws regarding the use of glass. The JDA has decided to go through the bylaws and ask the state government to frame new bylaws."

ENSURING SAFETY



The Confederation of Construction Products and Services says types of glasses and their location are primary cause of accidents in Jaipur. force the bylaws in Jaipur, said Drupak Gehlot, convener of the conf- glasses in buildings causes diffi- er Lal Jat, chief fire officer, Jaipur. Jat said firemen also faced problems

अमर उजाला | नई दिल्ली, रविवार, 28 फरवरी, 2010

कांच के इस्तेमाल पर कानून बनाने की मांग

नई दिल्ली। भवन निर्माण में इस्तेमाल होने वाले कांच का इस्तेमाल खतरनाक हो सकता है। इसी को ध्यान में रखकर कॉन्फेडरेशन ऑफ कंस्ट्रक्शन प्रोडक्ट्स एंड सर्विसेज ने सरकार को इसके खिलाफ कड़े कदम उठाने की मांग की है। केंद्रीय लोक निर्माण विभाग के पूर्व अधिकारी व कामनवेल्थ गेम्स भवन निर्माण के



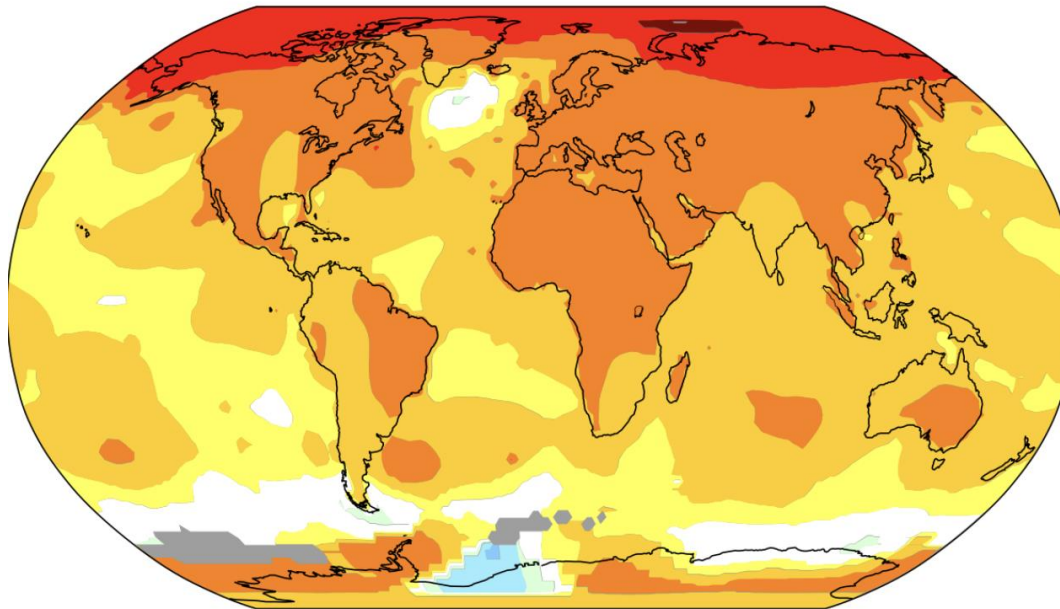
Agenda

- Environmental challenges
- Ambient air
- Indoor air
- Solutions
- CityAir and its products
 - CityAir ambient solutions
 - CityAir indoor solutions
- Opportunities for cooperation

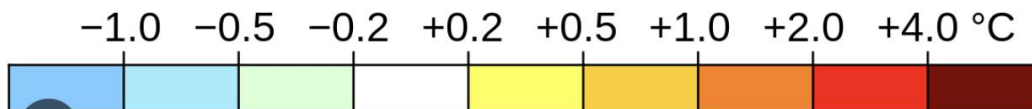


Challenges

Temperature change in the last 50 years



2011–2021 average vs 1956–1976 baseline



The frequency of “very severe cyclonic storms” has increased in recent years over the Arabian Sea. However, this has not measurably increased the threat to India's western coast, as most of these cyclones were making landfall in Oman and Yemen, Science Minister, Jitender Singh, told Rajya Sabha on Thursday.

Tropical cyclones in the Arabian Sea: Why are they increasing?

Cyclone ‘Biparjoy’ Becomes Longest-Lasting High-Intensity Cyclone in Arabian Sea Since 1982

The Arabian Sea, which was not particularly known for its cyclones in the past, is now transforming. But the marginal sea of the Indian Ocean was certainly not a pacific one, being witness to fierce storms, historians have told *Down To Earth*.

Received 15 May 2000; revised accepted 7 November 2000

Has the frequency of intense tropical cyclones increased in the north Indian Ocean?

O. P. Singh*, Tariq Masood Ali Khan and Md. Sazedur Rahman

SAARC Meteorological Research Centre, Abhawa Bhaban, Agargaon, Dhaka 1207, Bangladesh

An effort has been made to settle the question whether the intense cyclones have become more frequent over the north Indian Ocean, posing a more serious threat to the vulnerable coastal population of the region. The results of the study, which has considered the entire existing data of 122 years of tropical cyclone frequency over the north Indian Ocean from 1877 to 1998, have shown that there is indeed a trend in the enhanced cyclogenesis during November and May. These months account for the maximum number of severe cyclones over the north Indian

How Delhi became the most polluted city on Earth

Breathing in the Indian capital this month was like smoking 50 cigarettes a day.

By Umair Irfan | Updated Nov 25, 2017, 4:32pm EST

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Indian schoolchildren cover their faces as they walk to school amid heavy smog in New Delhi on November 8, 2017. | Sajjad Hussain/AFP/Getty Images

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- 5 What a new conservative call for "regime change" in America reveals about the culture war

What Happens When the Air Quality Index Surpasses 500?

The toxic air in the United States this week has flirted with the upper range of the 500-point scale. In the past decade, there have been times when the air quality was even worse.

 Give this article

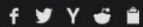




WHERE POLLUTION HITS THE ROAD: THE GROWING ENVIRONMENTAL HAZARD OF RUBBER TIRES

by: **Maya Posch**

110 Comments



July 28, 2022



As ubiquitous as rubber tires are due to the many practical benefits they offer to cars, trucks, and other conveyances, they do come with a limited lifespan. Over time, the part of the tire that contacts the road surface wears away, until a tire replacement is necessitated. Perhaps unsurprisingly, the material that wears away does not magically vanish, but ends up in the environment.

Car tyres produce vastly more particle pollution than exhausts, tests show

Toxic particles from tyre wear almost 2,000 times worse than from exhausts as weight of cars increases



📷 Emissions from tailpipes in developed countries are much lower in new cars, with those in Europe far below the legal limit. Photograph: Jacob King/PA

Almost 2,000 times more particle pollution is produced by tyre wear than is pumped out of the exhausts of modern cars, tests have shown.

The tyre particles pollute air, water and soil and contain a wide range of toxic organic compounds, including known carcinogens, the analysts say, suggesting tyre pollution could rapidly become a major issue for regulators.

Air pollution causes **millions of early deaths** a year globally. The requirement for better filters has meant particle emissions from tailpipes in developed countries are now much lower in new cars, with those in Europe far below the legal limit. However, the increasing weight of cars means more particles are being thrown off by tyres as they wear on the road.

The tests also revealed that tyres produce more than 1tn ultrafine particles for each kilometre driven, meaning particles smaller than 23 nanometres. These are also emitted from exhausts and are of special concern to health, as

The study modelled the effects of reducing particle pollution and discovered that it could cause an ozone increase of 20-30% in some densely populated areas of India and China. If left unmanaged, this will have a full-size poor impact on ecosystems and crop yields.

The researchers are calling for new strategies that take this interaction between pollution into account. The problem can be solved by concentrating on reductions in a much broader range of pollutants, particularly (VOCs) from chemical substances and fuels and NO_x from combustion.



VIDEOS GRAVITAS WORLD MY MONEY INDIA ENTERTAINMENT LIFESTYLE SPORTS SCIENCE PHOTOS

Why tackling particle pollution leads to upward push in photochemical smog

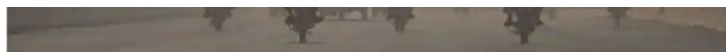
ugc.wionews.com

NEW DELHI • Written By: Lauren Creative • Updated: Jul 25, 2022, 06:39 PM IST



Reducing Air Pollution Can Actually Increase Ozone Pollution and Worsen Health

TOPICS: Geoscience Pollution Smog University Of York



What Is Photochemical Smog? The Reason the Sky Is Turning Brown in Los Angeles

Photochemical smog is the brown industrial haze that sits over cities like Los Angeles, and is full of major pollutants.



BY EVA HAGAN

APR. 26 2023, PUBLISHED 10:59 A.M. ET



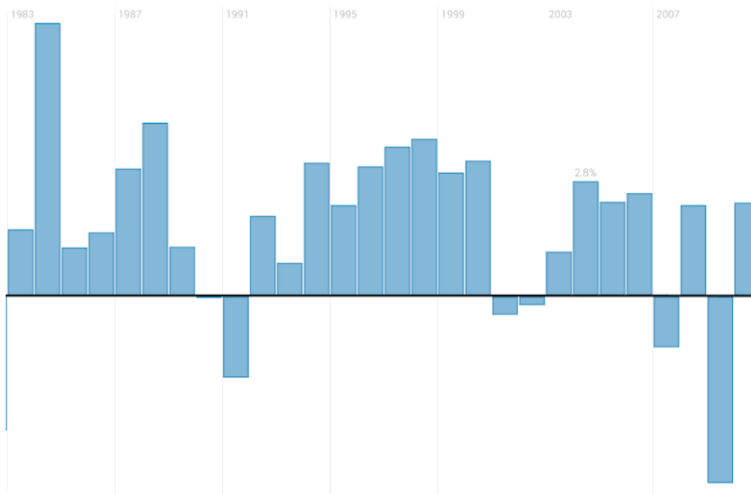
SOURCE: ISTOCK

you have been in Los Angeles (or seen pictures of the city) in the past few years, you have seen photochemical smog. The lingering brownish haze has **transformed the city into almost a permanent painting of pollution**. However, besides the adverse aesthetic effects on the city and other places around the world, photochemical smog is a major detriment to **human and environmental health**.

At first, what is **photochemical smog**, and how is it different from regular smog?

What next

Sustainability Vs Economic Growth



- India's economy set to grow
- With the rise in production, industries will face severe environmental challenges.
- Will need to play a larger and more proactive role in addressing sustainability issues including indoor and outdoor air pollution.
- Enterprises will need to establish air quality monitoring networks to provide data for decision making.

Wellbeing

Light and Daylight we all know well enough.
Glass containers are the future..

Air quality is only beginning to be talked
about

A. Ambient – Outdoors

B. IAQ - Indoors



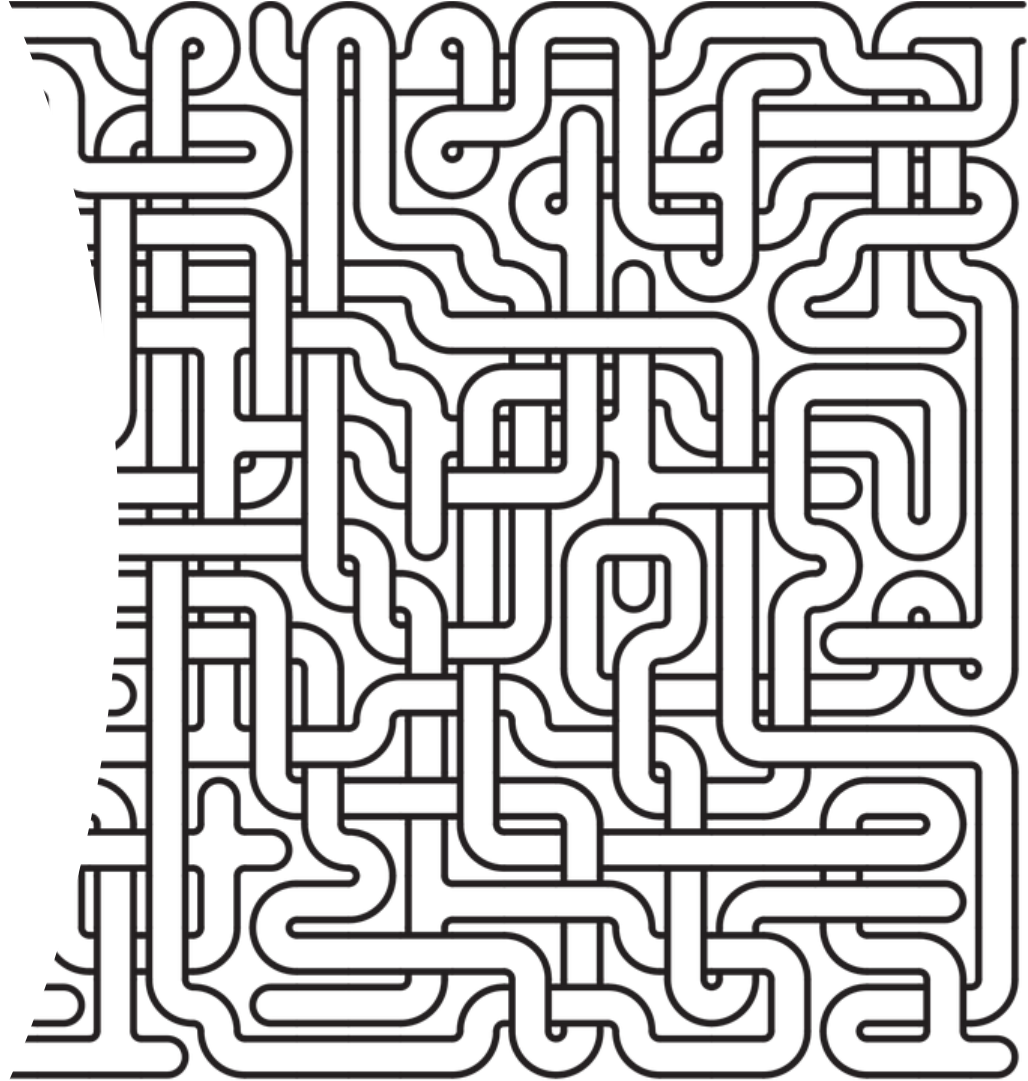
Ambient Air

- In news now.
- People are beginning to talk about AQi and PM2.5 and PM10, and greenhouse gases.
- Sources include.
 - Burning of fossil fuel for transportation, power generation, production in industrial activities etc.
 - Wildfires, open burning of garbage waste
 - Agricultural activities
 - Construction and demolition
 - Industrial emissions
 - Photochemical smog
 - Rubber particles from automobile tires
 - Windborne dust
 - Etc



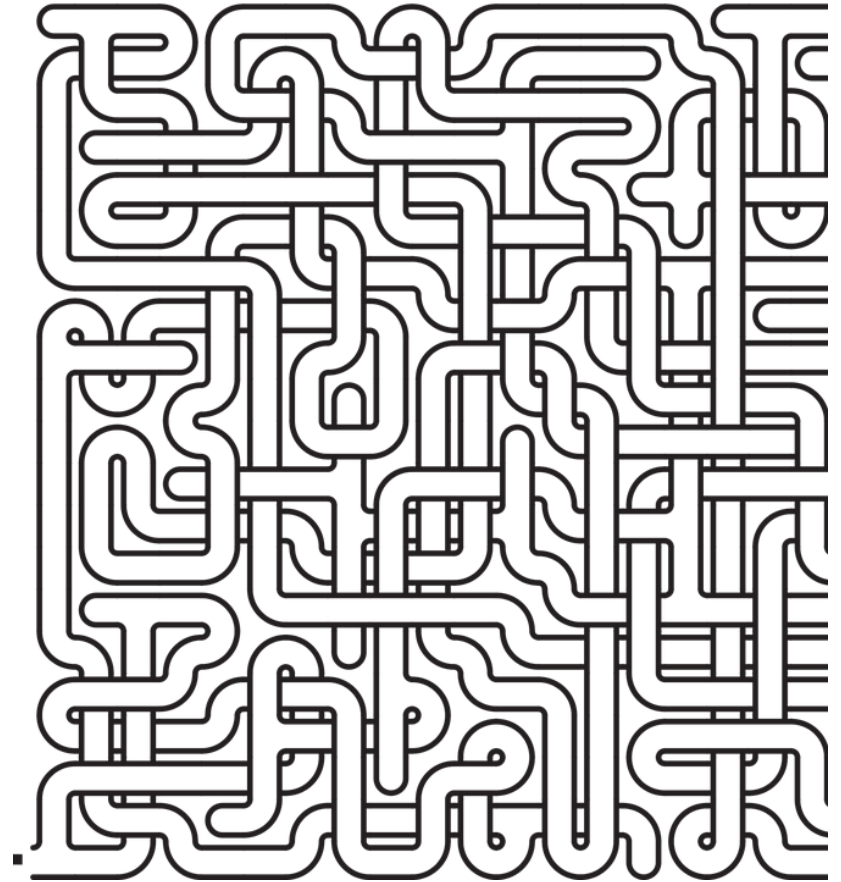
Solutions

- Long term
 - Reduction in consumption
 - Technological solutions
- What we can do now
 - Better understanding of source and spread
 - Base for policy and allocation of resources for technological solutions and interventions
 - Take corrective action in short term



Solutions

- Building professional ambient air quality monitoring networks to diagnose the problem
- Forecasting emissions
- Taking data-driven decisions and implementing corrective measures



IAQ – Indoors

- Not as much understood
- Still associated with ambient air but in a wrong way
- Common contaminants include CO₂ and CO, VOCs, and also NO₂, Radon, Pesticides etc



IAQ – Indoors

- Indoor air is a subset of ambient air.
- But with additional sources of pollution
 - Normal breathing and living
 - Smoking
 - Unwell people
 - Paints, plywood, etc.
 - Chemical sprays
 - Cooking
 - Mold-infestation
 - Industrial gasses and particulate matter
 - Etc

IAQ – Indoors

- Most common air conditioning solutions do not have any provision for treated fresh-air
- Indoor air pollution can be much worse than ambient air
- EPA says levels of indoor air pollutants often 2 to 5 times higher than outdoor and can exceed 100 times that of outdoor levels of the same pollutants
- Modern sealed windows save energy by preventing air leaks and control noise but will actually make IAQ worse

Inadequate Ventilation

If too little outdoor air enters indoors, pollutants can accumulate to levels that can pose health and comfort problems. Unless buildings are built with special mechanical means of ventilation, those designed and constructed to minimize the amount of outdoor air that can "leak" in and out may have higher indoor pollutant levels.

Solution

- Most air purifiers available in the market will only filter particulate matter
- Out best bet still remains fresh air in most cases
- Filtered fresh air where external air has high particulate matter



Solution

- Building professional indoor air quality monitoring networks
- Introducing air management solutions
 - Supply of clean fresh air
 - Smart indoor climate control

ESG/Green manufacturing standards

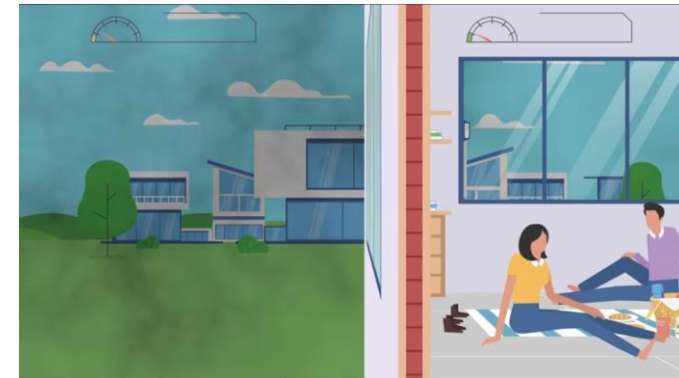
- Control emissions and make data-driven operational decisions
- Comply with environmental regulations
- Ensure safe and healthy working environment for employees
- Execute principles of a socially and environmentally responsible company



Cooperation opportunities

Way forward

- Invitation to collaborate
 - Capacity building and myth busting
 - Research
 - Product development
 - Windows with provision for integrating fresh air products
 - Glass that cleans indoor air
 - Integrated provisions for ventilation in windows
 - Much more..



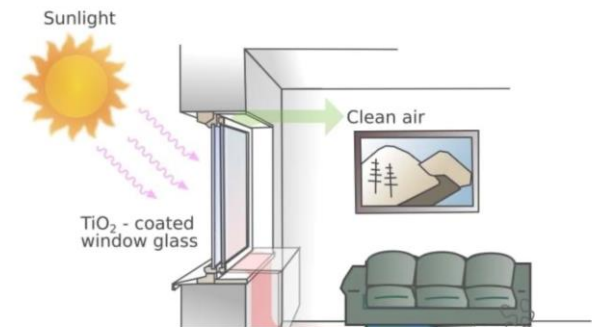
AIS | Anti Air Pollution Glass Solutions

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🕒 DECEMBER 7, 2015

Windows with nanostructured coatings can cure 'sick' buildings

by Uppsala University



Harmful organic molecules in the indoor air can cause adverse health effects—a problem known as the 'sick building'