



Int toll plaza vadodara bharuch, vadodara.

OCTOBER 2009

S	4	11	18	25	
M	5	12	19	26	
T	6	13	20	27	
W	7	14	21	28	
T	1	8	15	22	29
F	2	9	16	23	30
S	3	10	17	24	31

September is that time of the year which we seem to dread - a month where all the accounts need to be finalized - something where we architects and designers are very weak - as Mohit knows to his dismay! It is also time to put together the 16th edition of our journal - Archohmter.

September has also seen a fair bit of travel - after a hectic series of meetings in Libya - Sourabh led a 5 member team to Europe for visits to various fairs, and manufacturing units. On my part I clocked some serious miles across my favourite country - no prizes for guessing - Italy! Starting at Rome, then attending a wedding in the far south (at Cosenza), moving up through Perugia, Assisi, Verona (where I attended the Verona Fiere), Belluno and Udine. Finishing with a day's holiday in Venice. Of course I had the benefit of a wonderful companion - Seema, my wife, who apart from all other sterling qualities - is a fluent Italian speaker!



One of the best things a tourist can do is to stray off the beaten path - that is exactly what we did in Italy. Apart from seeing the 'Fontana de Trevi' - which I simply must see on every visit to Rome.

In Verona we were lucky to be shown around the 'centro storico' or historical centre - in the night - by a close associate of Seema's - with dinner thrown in. An excellent place, steeped in history, with quaint old tables, but definitely not an option for those who choose 'Asian Vegetarian Meal' as their preferred food on an airline! I chose roast quail from choices that comprised horse meat, donkey steak and rabbit stew!



Verona itself is a city of Roman origin - seen above on the right, is the 'Arena de Verona' - a Roman amphitheatre which today stages spectacular performances almost daily! Also in Verona is the world's most famous balcony - that where Juliet stood and gazed wistfully at Romeo as he serenaded her.

In Venice we stayed with a proper 'Veneziano' who showed us 'Venezia Nascosta' or literally 'The hidden Venice' in a post lunch walk. For some odd reason, I ended up taking pictures of old wrought iron grilles - of which there were myriad examples!



In this issue, you will find very interesting articles on toll plazas - from Rachna - who has been involved closely in the design of the Vadodara Bharuch Toll Plaza (for Larsen & Toubro); and accompanying Sourabh's essay on the generic subject - is an excellent article by Mr Manoj Dave, our guest contributor this month.

We've just celebrated Eid, and are now heading into the festive season, with Diwali just around the corner. Have a great time, shop till you drop - and help the economy bounce back into shape! Remember wise men have forecast the BSE sensx at 21000 in July 2010 - you need to do your bit to ensure that it falls in place!

- Kunal Savarkar

FEEDBACK: Please address all feedback to Atishi at [archohmter@archohm.com](mailto:archohmter@archohm.com)

# archohm works

The project consists of upgrading and strengthening of the existing four lane carriage way and widening the same to six lanes from km 108/700 to 192/000 of the Vadodara to Bharuch section of NHB in Gujarat on build, operate and transfer (BOT) basis. There is one toll plaza along the project highway at km 156/625 for toll collection.



The Toll plaza has three basic areas of operations:-

1. Plaza area
2. Control building
3. Office building

**Plaza area:** It consists of 8 lanes including one extra wide lane and one future lane in each direction. There is one toll booth on each island for each lane. The toll collection system is semi-automatic with a provision of one lane in each direction for a fully automatic (ETC) system. Booths are designed in a sleek vertical manner which gives clear visibility of approaching vehicle from a distance. Instead of a big large canopy, small canopies are provided for each booth to maintain the aesthetic beauty of the toll booths as well as to save money and time.

Booths are connected to the building through a 2.5 m deep tunnel which is running perpendicular to the road under the islands. The whole plaza is illuminated with the help of 30m high masts using 400W HID lamps.

**Control building:** It is placed on the central island of the plaza so that the whole plaza can be controlled properly. At the same time it helps the existing traffic during the construction without disturbing the booth and tunnel area.

It consists of a 'cash up' area on the ground floor to count the cash collected at each booth. This cash deposit is kept in a strong room and from here it transferred to the bank in the cash van for which a special money transfer vehicle room with a security guard is provided on the same floor. There are change rooms, a gym area and a canteen for toll operators on the first floor. One manager room & training-cum-conference room is also provided on same floor.

The 5m high control room is provided in the central circular part of the building on the second floor with circular external glazing. The position of the control room is such that the whole plaza can be clearly viewed from one end to another end.

**Office building:** It can be divided into three parts. First is the left side part which facilitates the administration, second is the central part as a point of sales area from where commuters can get prepaid cards to use the road without waiting at the toll booth for cash payment and third is the right side part as maintenance and service block.

**Semi automatic system:** This system is equipped with a vehicle detector in the entry lane which counts the numbers of vehicles and their axle numbers, a ticket issuing machine which issues a toll ticket at the press of a button on the touch panel and an entry lane controller which controls this equipment and sends the data to the data processing equipment of the toll plaza office.

**Electronic toll collection (ETC) system:** In this system a tag is fitted on the vehicle which transmits radio waves to canopy mounted antenna for identification of its code and other stored data. The antenna relays the received signal from the tag to the reader which transmits all information to the customer's information management system.



Hardworking and dedicated architect who has the capacity to take projects through from concept to completion, **Rachna Mittal** is one of the quiet performers who form the backbone of Archohm. The edit team of this journal wishes everyone were as good - and as prompt - at writing articles as she is!

My association with archohm is almost a decade old now and there are many a memories to cherish, of times which were difficult, challenging, creative, argumentative, exciting, enthralling and the likes of them.



DND flyway was the first toll road project of repute in India, which changed the way people looked at toll plaza and tolling, including yours truly. That is where archohm and I started our journey in our endeavor to create some truly different toll plazas in the country.

Archohm stands out amongst the architectural firms I have dealt with so far in many ways; to start with it is a super combination of architectural and electrical consultancy, as the name suggests, it has a team of young professionals, lead by Sourabh professionals, lead by Sourabh comprising of architects, interior designers and electrical and hvac experts, with an outsourced structural consultancy firm delivering a complete solution to one's needs as a one stop shop.

Youth brings in vibrancy, color, passion, drive, innovation, modernity, futuristic approach and above all enthusiasm to do something different, while keeping the functionality, purpose and cost and time as the nucleus for any design. Archohm is truly a young brigade in a hurry to change the world.



"While we are halfway through the detail design phase of a project, it is already dated, as so many new ideas would emerge while designing that if we keep improving it, we will never be able to finish it" said Sourabh during one conversation on a flight from Hong Kong. This signifies Archohm's ongoing creativity and burning desire to deliver the best to its client.

The most striking feature of working with Archohm is that they step into the client's shoes to think and feel like him to succeed in delivering what a client actually needs. There are hardly any gaps between client aspirations and delivery. And when it comes to toll plazas, they only need to be given the parameters viz., traffic, available land and budget. Give them a couple of weeks and sure, a design option to exceed your expectations is guaranteed.

The beauty is that they know all about commercial operations at the toll plaza and weave them into the design so well that you can actually mobilize your operational resources and start operating the toll plaza once the construction is over. There have been times when Archohm has actually helped improve operational efficiencies as well with their think tank working overtime to look beyond the obvious.

At Larsen and Toubro limited, toll plazas and Archohm are inseparable. All our toll plazas after 2005 have been designed by Archohm be it Panipat, Dharmapuri, Jascheria, Palampur, Swaroopganj, Vadodara etc and there are a lot more in the pipeline in the near future.



From innumerable trips to sites, including China and Malaysia, design discussions and arguments on projects to sharing the learnings on the world of tolling in India, **Mr. Manoj Dave's** contribution to Archohm has been phenomenal.

**toll has not taken its toll on us yet!**



Young, effusive, a talented architect and designer, an artist - AND a born charmer - just ask the young women at Archohm for confirmation! This is **Fynshganiang Taring** - Holds the distinction of having been photographed alongside each and every building that we saw on Archolour 2! Now that is dedication!



How is it like to see a building about which you have heard, read and admired so much as a student and now as an architect with your naked eye and feel of it... Its just a 'Wow' feeling!! A dream come true one could say at least. Never have I ever imagined that I would get a glimpse of one of the most magnificent examples of the most groundbreaking architecture to have come out of the 20th century - the Guggenheim Museum - which holds permanent and visiting exhibits of works by Spanish and international artists.

It is one of the great buildings of the modern generation in the style of deconstructivism. A museum of modern and contemporary art designed by Canadian-American architect Frank Gehry said to be known as the 'Father of Deconstructivism' built by Ferrerovial and located in Bilbao, Spain.

The building itself is an innovatively designed architectural landmark that creates a seductive backdrop for the exhibition of contemporary art. It is an extraordinary combination of interconnecting shapes. Orthogonal blocks of limestone contrast with curved and bent forms covered in titanium and these materials along with glass together combine to form the main palette around which the whole building revolves.

It has a structure that consists of radically sculpted, organic contours. Sited as it is in a port town, it is intended to resemble a ship. Its brilliantly reflective titanium panels resemble fish scales, echoing the other organic life forms that recur commonly in Gehry's designs, as well as the river Nervion upon which the museum sits. Its beauty, shape and form is what struck me hard and I was both fascinated and amazed by its huge volumes and its surrounding elements.

Surrounding the museum are the various structures like the puppy by Jeff Koons at the entrance of the building, the tulips also by Jeff Koons and Maman, the spider by Louise Bourgeois at the rear end and so forth which co-relate and blends very well with the structure as a whole. The building is also surrounded by a series of attractive walkways and squares giving shape and form to the surrounding neighbourhood.

All in all a great exposure to be treasured for a lifetime and to get such an opportunity to see one of world's most fascinating and interesting buildings is itself a great achievement on the personal front and I would like to express my heartfelt gratitude to the firm for having made this possible for all of us. The whole idea was a fabulous one, starting from the concept level itself!

Three Cheers!

**NEWS:** European fairs were covered with Kunal exploring the 'Abitare Il Tempo' fair at Verona and Sourabh visiting the Valencia furniture fair. Our 'A' team comprising Amit, Aditi and Atishi took in the famous Cersaie fair at Bologna and visiting various manufacturing units in Europe. Also, Mr L R Sharma's first tryst with Europe - as he is also traveling with the Archohm team.

**Calatrava's new bridge at Venice:** The 'Ponte della Costituzione' is only the fourth bridge across Venice's Grand Canal. Designed by Santiago Calatrava, it was finished in 2008 and opened to the public on the night of September 11, 2008. It has raised praise as well as controversy - both true measures of success in today's world!



Kunal missed seeing it all together as it was not on any of his 'essential' journeys - which in fact is the main criticism of the project - that it is too close to one of the other bridges, and could have been built elsewhere!

**UPCOMING PROJECT:** Generation next play schools. Archohm has been entrusted with the design of the play school. The day care and play school at Noida is looking forward to a swift completion so that it opens for the next academic session. Also has an aspiration to be a rated green building project.

The Libyan expansion of Archohm continues with the finalisation of works for the Kufra Township where our projects include public buildings like educational institutions, hospitals, mosques and markets along with the complete infrastructure facilities. Last year the housing scheme with individual units were designed and their construction is now underway.



The engineering of the Integated Infrastructure of Hun City (near Wadai) on a site of over 48 hectares is an interesting experience that will demonstrate the different skill sets within the Archohm umbrella where the engineering not only has to be technically correct and climatically adaptable but also financially viable - for the client - who were awarded these design and build contracts.

Last but not least on the project update, the Delhi Haat tender was floated and the work successfully awarded. The construction of this public project shall begin sometime next month!

NEW JOINEE:

Ravindra Kumar Architectural Draughtsman

Archohm's in-house recruitment team headed by Archana is on an overdrive as we need to strengthen the group with at least ten designers to keep up to the work pressure.

BIRTHDAYS THIS MONTH:	
Sanjay Rawat	Second
Ajit	Tenth
Mohit Malhur	Seventeenth
Atishi Arnt	Twenty Second

# sourabh's desk

if people were honest, archohm may not have started.

an explanation before random conclusions are drawn. toll plazas with toll booths, people, equipment and the elaborate system exists just to check that one, people pay honestly while using a facility and two, the paid money is honestly recorded and received by the promoter.

obviously, the fiction in the above mentioned phenomenon makes the toll plazas an intensely complex machine that needs to be defined and hence needs a sensitive design philosophy. archohm's sensibilities have been nurturing this faculty of design and engineering for a decade now.

archohm's journey started from the delhi noida toll plaza and transcends through the world's busiest delhi gurugam toll plaza and touches new heights with the exclusive facility on the vadodara bharuch national highway.



global journey of toll plazas probably started with south africa which boasts of the first generation plazas that were manually operated. plazas like 'de hoek' and 'mool river' are more today's variant and the futuristic 'diamond hill plaza' epitomizes the south african plaza designs landscape. the next level of tolling has also been pioneered by them by organizing a comprehensively looped jobberg and pretoria tolling solution with no plazas, the entire system works with all prepaid users with overhead gantries that track the payments. from first plazas to no plazas.

similar philosophy is adopted across the bay areas of san francisco where daily commuters to the downtown refund the extensive infrastructural facilities through overhead gantries only, not far, the neighboring suburbs of los angeles boast of the elaborate 'orange county' plaza designs that have questioned canopies with tall vertical booth typology.

europeans have a divided stand on tolling ideology, the netherlands has a clear state funded structure, neighbouring france has an extensive network of 'peage', each of these are designer statements that epitomize french style of design and engineering, even the spanish have a fair lineage of toll plazas and equipment design.

tolling is an industry that has interesting technological evolution as well as a journey that transcends physically, from functionality to form, finances to actuals, all come together to represent the vision of their promoter. at archohm, the fundamentals of toll plazas have been studied and experimented in a journey to become pioneers in the country, still eager to learn and explore...

**toll has not taken its toll on us yet!**

