

Hatchback for JAGUAR

By

Sushim Shetty

R109213008

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Under the guidance of

Mr Niren Parsai

Niren Parsai
Assistant Professor
School of Design Studies
UPES, Dehradun

Manas Ranjan Mishra
Head of Department
School of Design Studies
UPES, Dehradun

By

Sushim Shetty
Enrolment No: R109213008
SAP ID: 500027610



University of Petroleum and Energy Studies, Dehradun

Declaration

I hereby declare that the project work entitled "Hatchback for Jaguar" submitted by me in partial fulfilment of the requirements for the award of the degree of Master of Design (Transportation Design) at School of Design Studies, University of Petroleum and Energy Studies was carried out by me during 15 Jan 2015 to 16 April 2015 at "UPES, Dehradun" under the supervision of "Niren Parsai, Assistant Professor".

Date:

Sign:

Place: UPES

Name: **SUSHIM SHETTY**

SAP ID: **500027610**

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ABSTRACT

A car with a door across the full width of the back end that opens upwards to provide easy access for loading is called a hatchback. Hatchback comes in various trims like economy, sporty and premium. Premium hatchbacks are launched by luxury brands at a comparatively higher price point to provide customers a luxurious experience within a tight space.

The BRICS market which comprises of Brazil, Russia, India, China and South Africa is presently considered to be the most profitable market for automakers. Over 60 percent of the car sales in this market come from hatchbacks. Luxury auto brands here enjoy tremendous success from their premium hatchbacks. Jaguar being a famous luxury brand in this market is absent in the premium hatchback segment.

The following project is based upon this idea of Jaguar working on a premium hatchback for this market. The project deals mainly with the exterior aesthetics of the designed hatchback. The vehicle has been designed according to future trends followed by the automobile styling industry.

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INTRODUCTION

A hatchback is a type of an automobile which contains three or five doors, however without a pronounced boot. In urban areas the vehicle density tends to be very high. This causes long traffic jams as well as an acute shortage of wide parking space. Hence people living in cities generally prefer to own a hatchback as it is very easy to drive and park. This project deals with the ideation and design of a hatchback for a premium brand.



Fig 2.1 [2]

2. DATA COLLECTION

2.1 Literature review

History of JAGUAR

As a 20-year-old motorcycle enthusiast in England, William Lyons launched the Swallow Sidecar Company with a friend, William Walmsley, in 1922. Five years later, Swallow was fashioning bodies for chassis built by Austin, Fiat, and others. By 1931, the Coventry-based company had joined with nearby chassis builder Standard Motor Company to build the SS1, for "Standard-Swallow." The first car to bear the name Jaguar appeared at the 1935 London auto show: the SS Jaguar 100.[1]

The "SS" already had bad connotations in the U.K., thanks to the Nazis in Germany, and the letters would soon be dropped from the company name.



Fig 2.1.1 Jaguar XK120 [3]

During WWII, Jaguar returned to building sidecars, but this time for the military. After the war, the company debuted its first sports car, the XK 120, at the 1948 auto show in Earls Court. Lyons originally intended to build only 200 of the cars, but demand for the striking body with a top speed of 120 mph was too great, and he geared up the Coventry line for mass production. In 1953, a drophead coupe version was added to the lineup.



Fig 2.1.2 Jaguar 120C [4]

Jaguar followed the success of the XK 120 with its C-type, or competition type, cars of the 1950s. The underpinnings were based on the 120, but the bodies were all-new and aerodynamic. The car debuted in the 1951 24 Hours of Le Mans race--and won, with Stirling Moss at the wheel. Altogether, there were only 54 C-types ever built.

In 1955, Lyons suffered the tragedy of losing his only son, John, on a trip to Le Mans; it was also the year Enzo Ferrari's son Dino died. Later that same year, Lyons was knighted by Queen Elizabeth.



Fig 2.1.3 Jaguar D [5]

Jaguar improved on the touring-ready 120 with the new XK 140, and updated its race squad with the legendary and instantly recognizable D-type. The bass-mouth front intake, the bulbous, curved fenders, and the aerodynamic fin behind the driver's head were innovations in auto design. In 1954, the first D-type was driven from England to France for testing at Le Mans. It didn't win in 1954, but it did in 1955--after driver Mike Hawthorn caused an accident that resulted in more than 80 deaths, including that of Mercedes driver Pierre Levegh. Jaguar didn't advertise the win.



Fig 2.1.4 Jaguar E type [6]

While most automotive histories involve companies being at the mercy of creditors and buyers, in 1960, Lyons bought Daimler. In 1961, he bought truck manufacturer Guy Motors, and in 1963, he bought Coventry-Climax, maker of race engines and forklifts. In its own factories, Jag had created the iconic, long-nosed E-type, which debuted in 1961. In 1966, Lyons announced that Jaguar would merge with British Motor Corporation, though he would stay on as a consultant. In 1968, the 4.2-liter Series 2 debuted, followed by the ill-conceived V12 Series 3 E-type of 1971.



Fig 2.1.5 Jaguar XJ 1980 [7]

BMC also owned Austin-Healey and MG, and in 1966 became British Motor Holdings. This entity merged with Leyland, owner of Triumph and Rover, in 1968, to become the British Leyland Motor Company. At this point, many of the Jaguars rolling out of Coventry were sedans like the new XJ6, plus the Series 3 XKE. But Jag was still close to bankruptcy, so in 1975, the government took control under a new name, Leyland Cars. This didn't work either, so Jaguar Rover Triumph split off. After years of struggle, Jaguar debuted the XJ40 and became solvent once again. In 1984, the company was privatized again, and in 1985, Lyons died.



Fig 2.1.6 Jaguar X type [8]

The idea of staunchly British Jaguar having a foreign owner was inconceivable--unless you were the head of Jaguar and knew the company needed resources for new models. Enter Ford Motor Company with \$2.56 billion in 1990. The company used the cash to modernize and expand its facilities, and to produce XKR and XK8 sports coupes. It also brought the much anticipated XJ 220 prototype to market in 1992--to nearly worldwide disappointment. The 6.2-liter V12 had been downgraded to a 3.5-liter V6, and the all-wheel drive was swapped for more conventional rear-wheel drive. The car wasn't even legal to own in the U.S.



Fig 2.1.7 Jaguar XF [9]

Jaguar continues to build X-type cars, both sedans and coupes, with a sporting heritage. The latest lineup includes the XJ, XK, and XF, all of which seem to share something with owner Ford and stablemate Volvo. Not for long, though--in 2008, Jaguar was sold once again, thanks to the auto industry's fall from great heights. In a neat twist on history, Jaguar (along with Land Rover) is owned by Tata Motors, based in the former British colony of India.

2.2 Review of Jaguar XF^[10]



Fig 2.2.1 Jaguar XF [10]

The Jaguar XF has been at the heart of Jaguar's renaissance since it went on sale in March 2008, and continues to be its standard-bearer to this day.

But while the Jaguar XF gave its makers a car to be truly proud of, it has taken a long time for Jaguar to really exploit that advantage.

The bigger-engined XF range has proven adept at taking on all-comers at the upper levels of the class since its introduction, with the 3.0-litre diesel available in two states of tune and 3.0 petrol attracting many plaudits, and the 5.0 V8 underneath the bonnet of the mighty Jaguar XFR stealing many headlines. However it took until cosmetic and detail technical tweaks for the 2012 model year before the XF became available with a 2.2-litre diesel, a type of engine whose sales dominate the sector. Now in 161 and 197bhp states of tune, it rivals the ubiquitous BMW 520d or equivalent Mercedes E-Class.

Meanwhile, deliveries of the Jaguar XF Sportbrake - a sports estate in modern parlance - began in 2012, finally giving the XF the extended line-up it has long deserved.

All-wheel drive Jaguar XFs are sold in markets outside the UK, while the Chinese market also gets the option of a smaller petrol engine.



Fig 2.2.2 Jaguar XF [10]

The Jaguar XF design has been modified over time, with the most significant changes being made in 2012. These styling changes give the XF the front-end it should always have had: sleeker and more in keeping with the graceful lines that make this (by the estimation of all our testers, at least) the best-looking car in its class by some margin.



Fig 2.2.3 Jaguar XF [10]

The back end and interior were tweaked, too. Rear lights have been given LEDs and redesigned so that they extend further into the boot beneath the chrome strip. This seems to balance the styling a little, even if the changes are fairly subtle.



Fig 2.2.4 Jaguar XF [10]

Inside, the XF got a very subtle tidy-up, improving the ergonomics but maintaining its design flair, that has always helped the car stand out from its class rivals.



Fig 2.2.5 Jaguar XF [10]

Mechanically, the XF follows Jaguar tradition, with a range of front, longitudinally mounted engines and rear-wheel drive. All Jaguars now come with automatic gearboxes, regardless of your engine choice.

The range begins with the 2.2-litre diesel, available in two states of tune, and extends to two variants of the 3.0-litre diesel. There is also a petrol option, in the form of a 3.0 V6. Above the volume-sellers sits the supercharged 5.0-litre V8 XFR, which is still our choice of super-saloon in the segment.

There are six Jaguar XF trim levels: SE, SE Business, Luxury, Portfolio, Premium Luxury, Sport and S. However, not all are sold in conjunction with every drivetrain option, so buyers may not have the choice they expect. Entry-level kit includes stop-start, alloys, dual-zone climate control, electric seat adjustment, rain-sensing wipers, Bluetooth connectivity and a rear-parking aid.



Fig 2.2.6 Jaguar XF [10]

2.3 Market Research

Premium hatchback is a niche segment in India. The segment is still in its early stages. However this segment is a fast growing one especially due to the ever growing traffic situation in our country. Hence a thorough market research was done in order to understand the intent behind the purchase of a premium hatchback by a customer and also the effort taken up by an automaker to sell the model.

Mercedes A Class [11]

The A-Class launched here is the third generation of this entry-level Mercedes. The first A-Class (W168) launched in 1997 was a compact package introduced at a time when Mercedes was under fire globally for its declining quality. Further, its release was marred by some bad press when journalists managed to topple the car during a test. Mercedes exhibited its commitment to safety by equipping its smallest offering with ESP as standard, to ensure no repetitions of the incident. However, the topple had already made the A-Class infamous.



Fig 2.3.1 Mercedes A (1997) [11]

2005 saw the launch of an improved A-Class from Mercedes (W169). While it didn't look too different from its predecessor, some new tech including an improved ESP system, CVT transmission and exterior / interior trim options refreshed the model for another few years.



Fig2.3.2MercedesA(2005)[11]

And in 2012, a thoroughly reworked & far more appealing A-Class (W176) of the current day. The earlier A-Class looked more van-like in its styling, whereas this one has a completely different body-type. It's almost as if Mercedes has compensated for the earlier 2 versions by making this generation extremely wide and low-slung in comparison. It might just be the car to help Mercedes shake off its dusty image of an old man's choice in India.



Fig 2.3.3 Mercedes A180 2013 [11]

Designed in Sindelfingen, the car is well-proportioned and sits well on its large alloys mounted far to the corners. Sleek and refined, we were impressed by the level of surface resolution exterior designer Fan Zhang and lead exterior designer Mark Featherstone have

been able to accomplish in this model given some of the less successful recent examples in the Mercedes range. The rear fender treatment in particular is a much more elegant solution than that seen on the E-Class and CLS, allowing the feature lines to fade out rather than collide with a rear haunch.

The front end design is in keeping with the design language of other models in the range and is arguably the most distinctive and successful element of the entire vehicle, wearing a prominent grille made up of a multitude of hexagonal shapes of differing sizes and large badge at the center. This hexagonal motif is repeated in the wheels and lower rear bumper lending a harmonious aspect to the design.

Seen in profile, however, the Concept A-Class is the quintessential definition of derivative styling. The slender DLO and overall silhouette looks as if it could be a carbon copy of the Volkswagen Scirocco, though with a longer hood, while the feature lines diving through the bodyside – one dropping from the top of the front wheel arch across the door and the other raising from the sill and kicking up to meet the C-pillar – are reminiscent of those found on a 1-Series BMW. Seen from the rear, there is a similar impression of *déjà-vu*, with the rear lamp cans resembling those found on current generation Audis.

However unoriginal, the Concept A-Class is still successful in its design, and the kick-up at the rear of the DLO is clever and well-executed reinterpretation of the sweeping element seen on its predecessor, though on a smaller scale.

The argument for having created a sleek two-box over the upright form of the original A-Class is that sales of vehicles in the premium compact car class are on the rise. And while that is true, the concept looked well suited to conquer a market that has already embraced dynamic silhouettes paired with a rear hatch, which is not the case in either the US or the Chinese markets, which have historically preferred a traditional trunk and decklid.



Fig 2.3.4 [11]

Tail- and headlamps include hexagonal elements seen in the grille and lower rear bumper inserts (below)



Fig 2.3.5 [11]



Front end retains the Mercedes language.

Upper and lower feature lines and resulting surfacing is reminiscent of BMW 1 series.

Fig 2.3.5 [11]

BMW 1 Series

The 1-series is unmistakably a BMW with its kidney-shaped grille, long bonnet and twin-barrel headlamps, but that doesn't necessarily mean it's the best looking around. In fact, its

ungainly proportions – short, tall and backward leaning – make it look a touch awkward. It simply doesn't make the brilliant first impression that the A-class manages so easily. There is some nice detailing, like the strong shoulder line and the accents in the headlight units (base models don't get projector headlamps) and the classic Hofmeister kink, but overall, it's quite a bland design.

The 1-series is compact, even for its class; both the A-class and the V40 are bigger. But importantly, the 1-series' wheelbase is relatively generous, in the interests of cabin space and to compensate for the longitudinal engine, RWD layout, which isn't the most space efficient.

To achieve BMW's trademark 50:50 weight distribution, the engine had to be pushed back to almost behind the front axle line and the battery moved to the boot floor where the spare wheel is normally placed. And there isn't a spare wheel; BMW, being BMW, has stubbornly stuck to run-flat tyres despite the growing dissonance from Indian customers who want the security of a spare.

The 1-series' suspension has been completely revamped from the previous generation (E21), which drew criticism for its not-so-involving handling. The new car gets a five-link rear axle and MacPherson struts up front, complemented by a double-joint, cross-strut front axle. The track is also pretty wide and this gives the 1-series a planted stance, but it's not as hunkered down as it could be thanks to the raised suspension for the Indian-spec models. The Indian 1-series gets BMW's 'rough-road' suspension that offers better damping on bad roads and ground clearance that's been jacked up from 140mm to 157mm – very useful when tackling speed breakers.

There's also a new electro-mechanical steering system, which alters its weight and feel depending on the mode chosen on the Driving Experience Control system.

In fact, all variants of the 1-series come with the system, which also alters gearbox and engine responses.

Proportionally the car is clearly rear wheel drive, and this unique attribute in this class will be key to its appeal. The five door is on the hatchback side of being an estate and this careful

balance enables it to compete with hatchbacks whilst retaining the appeal and status of the 'lifestyle estate'.

Classic BMW design cues such as the 'Hofmeister kink' in the DLO and the kidney grille are evolved in a design that also features the flame surfacing now typical of smaller and more sporting orientated BMWs.

Unlike the 7, 6 and 5 Series cars, the 1 Series does not have indicator lamps shrouding the top of its headlamps, or a bonnet surface that extends over the top of them as previous BMW designs had, which is the reason the car has a slightly startled, wide-eyed appearance.

Inside the car evolves design themes similar to the X3, but has a more playful design identity; witness the sweeping door grab handles, gear shift surround and passenger side IP split.



Fig 2.3.6 BMW 1 Series [12]

AUDI A1



Fig 2.3.7 Audi A1 [13]

The Audi A1 is a stylish, high quality and competent supermini, if a little expensive

Our first look at the Audi A1, of a fashion, was as the Metroproject Quattro concept at the Tokyo motor show in 2007, and it's a credit to Audi's design studio that it made it through to production virtually unscathed. Even debadged, it would be recognisable as not just the son of Metroproject but also the product of Audi, and trademark signatures like LED running lights abound.



Audi's trademark LED daytime running light signature strip appears on most A1 variants

Beneath the uniquely Audi exterior lines, meanwhile, lies something altogether more familiar. The VW Group is the master of sharing platforms and architecture, but never before has quite such a brazen attempt been made to justify the price of an Audi that uses the same underpinnings as a Seat Ibiza.



Audi's trademark LED daytime running light signature strip appears on most A1 variants

The A1's wrap-over bonnet looks noticeably large against the A1's short wheelbase but it links the A1 to Audi's sporting models, the TT and R8. The grille marks a departure from the traditional trapezoidal Audi shape, with an additional side introduced in each of the top two corners.

This contrasting roof line is a relatively cheap option and comes in four different colours, depending on the main body colour. However, some body colours (such as Cumulus Blue, Ice Silver and Brilliant Black) prohibit the option.



Sporty touches like a roof spoiler lift the A1 above lesser superminis

Polished tailpipes, along with front foglights, help identify Sport models. S-line trim adds significantly to the price, but adds revised front and rear valances and a roof spoiler.

The battery is placed in the boot to improve weight distribution, but it means there is no room for a spare tyre. There is, however, a little extra storage space for small items under the boot floor around the battery.

Lift the large tailgate and you'll find additional rear light lenses. They're fitted to ensure that the A1 can be seen at night when the tailgate is up.

Here, more than anywhere, the Audi A1 needs to live up to its positioning as a high-end product and, in most respects, it does. The main switchgear is recognisable from other Audis (no bad thing), and in general there is an aura of solidity that befits the four-ring badge. However, our initial review car came equipped with nearly £5000 worth of optional equipment that included sat-nav, 40GB hard drive, climate control and automatic wipers and lights, which is bound to add a sheen of luxury. However, even an entry-level model feels plusher than the average supermini.

When viewed from the driver's seat forwards, the cabin generates an upmarket impression. The A1's air vents are neat and the cabin layout is cleaner than that of larger Audis. It says something about the perceived quality that it would be no surprise if many elements of the A1's interior filtered up the Audi range in future.

Look other than forwards, however, and the A1 feels much like a conventional supermini. The rear seats are big enough for average-sized passengers, but you'd find at least as much in most superminis.

The boot is equally average. Luggage capacity of 270 litres with the seats up is less than that of the Ford Fiesta (295 litres) and Citroën DS3 (285 litres), although it significantly betters the Mini's rather apologetic 160 litres. Unfortunately, the five-door Sportback offers no more luggage space, its boot capacity identical to the three-door's.

Even refinement falls into the 'good but not exceptional' category, with tyre noise frequently causing a notable background hum.

But most buyers will care more about the sensation the A1 offers from the driver's seat, and although it successfully manages to feel like a miniature Audi A4, it lacks the outrageous, brazen look of the Mini.



Fig 2.3.8 [13]

Mercedes A180 vs BMW 1 series

A few days back, I read a comparison of the BMW 1 Series in diesel guise with Mercedes's practical, spacious and well-packaged B-Class. The latter won courtesy the aforementioned attributes. But, the 1 Series clearly emerged as the younger man's car, and one to buy if driving pleasure is what you seek.

However, Mercedes has an even younger car in its Indian line-up now. And it looks like a million bucks. It is young, dynamic and aspirational, and in fact, more fun to drive than the

B-Class



The A-Class looks a million bucks in front of the 1 Series Fig 2.3.9 [15]

The A-Class looks like a million bucks, and standing next to the BMW, it completely pales the 1 Series. Now, the Mercedes test car came with some optional extras – larger, sexier looking wheels, the diamond studded grille and red adornment for the front and rear bumper. But even without these add-ons, the A has more street presence. The BMW with its extra large eyes and design lines that look dated in the A's company, looks a generation old. It also looks a tad boring, if you ask me.



Fig 2.3.10 [15]

The A is also better finished and more visually appealing on the inside. It gets an all black interior, but the matte metal finish for the air con vents, the clocks, the COMAND system dial and the door handles, as well as the steering, makes the interior look racy and plush at the same time. The white stitching on the door trim, the front armrest and the seats make the cabin even more alluring. There's rich looking soft grain plastic all over the dashboard too.



The B's interiors are not modern looking but are feature loaded Fig 2.3.11 [15]

The BMW scores equally high when it comes to fit and finish and the quality of plastic all round. But its interior just doesn't have the same design flair as the A-Class. To us then, the A-Class wins hands down on visual appeal, both inside and out. It is without doubt the one with the higher pose value.

BMW, though, prides itself for producing ultimate driving machines. And the 1 Series lives up to it, especially in the A-Class's company. The A is an accomplished handler – it is beautifully balanced, turns into corners with enthusiasm and grip, and it can handle quick direction changes without feeling soft or ungainly.

But, drive the 1 Series soon after, and it just connects with the driver better. It lets you in on the happenings sooner and in more detail. It feels more controllable on the limit. And when

you really want to cane it, it just has better prerequisites – a gutsier engine, a keener gearbox and better connect via the steering.



The 8-speed auto makes the 1's engine an enthusiast's delight Fig 2.3.12 [15]

Yes, the engine and the gearbox really set the 1 Series apart. The 1995cc diesel engine displaces fewer ccs compared to the Mercedes, but it makes appreciably more power and torque. It sounds better and more refined too. On the road, the higher output translates into a 0-100kmph time that is two seconds quicker than what the A-Class can muster. The BMW also has a higher top speed.



The 7-speed DCT auto in the Merc isn't quick responding

It is a quicker in kickdown too, making it less tiresome to drive quickly on the highways, particularly on two-laned highways where quick overtakes are not only frustration busters, but also safer. The BMW gets an 8-speed torque convertor automatic, while the A-Class uses a 7-speed dual clutch automatic. Both come with manual override functions, but only the

Mercedes gets steering mounted paddle shifters. But even so, the BMW's box is more alert to both manual as well as the throttle inputs, which makes it more involving to drive.



On the more mundane but passenger-centric front, the BMW offers a bit more passenger room all round

On the more mundane but passenger-centric front, the BMW offers a bit more passenger room all round. It has more comfortable seats too, especially at the rear. And because of its larger glass area and flatter sides, it feels airier too. The A-Class with its racy styling and large front seats and tiny rear windows is almost claustrophobic to be in, at the rear. But again, be it room or comfort, the 1 Series isn't hugely better.



The RWD 1 Series is back, joined by the young A-Class

It is a significantly better riding car, though. Compared to the A, which is stiff and noisy, the 1 handles the bumps and potholes and the broken road with more aplomb. It is quiet, better damped, and less rattly. It might sound odd, but if we had to pick the more comfortable car between the two, the BMW would score over the Mercedes.

Now, the decider. The cars you see here are the A 180 CDI Style and the 118d Sport Plus. Both are top of the line diesel variants of the A and the 1, but in terms of pricing, these are over ` 10 lakh apart, with the BMW costing more. Now, while you can't order the A diesel in any other trim, the 1 Series has two additional cheaper trims to choose from.

The basic – the 118d – costs almost the same as the A-Class but it doesn't get electric driver's seat, or the iDrive to go against Mercedes' COMAND system, or even Bluetooth telephony, headlamp washers or cruise control. The mid variant – the 118d Sport – compares best with the A 180 CDI Style in terms of comfort features, but it costs Rs 4 lakh more.

As a product, the 1 Series does better. It's got better performance, better economy, more space and a better ride. But, is it really worth the premium that BMW demands over the A-Class? Unless you are like me and simply won't look beyond the rear-wheel-drive format, no. The A-Class is the better proposition once cost and economy is factored into the equation.

2.2 User Research

Questionnaire

1. Why did you opt for a premium vehicle?

2. Why did you choose this specific brand?
3. What is your perception about the other premium brands?
4. What made you choose a hatchback?
5. What is your perception about driving in a premium hatchback?
6. What is your perception about driving in a premium hatchback?
7. What are the exterior features you desire in a hatchback?
8. What if Jaguar launches a premium hatchback?
9. What other brand would you choose?

Dealership visit

Mercedes Benz TT motors: Gurgaon, Haryana.

This showroom is considered to be the biggest showroom in NCR region. All models present in Mercedes portfolio are sold here. Twelve hours was the total amount of time spent in the showroom.

Mercedes Benz was launched in India in 1996. The Mercedes Benz A class was launched in 2012 in India. According to the showroom manager, Dalip Ajay this model has been the current best seller in the showroom. This mainly because of its unmatched performance coupled with tight space. This vehicle was preferred equally by both males and females. Corporate and IT professionals formed the bulk of the customers. This mainly because of the tight dimension s of the vehicle and the space crunched NCR region forms an ideal setting for such a vehicle.

The main reaction of customers after test driving this vehicle was surprising. They felt this vehicle is very bug from within. Thereby eliminating the feeling of a small car. Also the suspension setup is excellent for Indian bad roads. This has been specially tuned for our road conditions by increasing the ride height. The main point made by the showroom manager was that there was a sizeable number of orders from rural areas too. This reflects the changing perception of the Indian customer. Earlier it was a norm that premium cars should have a prominent boot among the rural populace. This shift in mindset is an encouraging news for automakers looking to venture into the premium hatchback segment.



1 Dealership visit

AMP Motors JAGUAR: Gurgaon, Haryana

A visit to a Jaguar showroom was imperative to understand the customer perception about the brand as well as the company's approach towards selling their cars. This dealership was established in 2006 and is one of the most successful showroom in the region for Jaguar.

According to the dealership executives Jaguar is a more premium brand as compared to Audi, BMW and Mercedes Benz. This is mainly because of the design of the vehicle as well as its exclusivity. The executives were proud of the fact that the automaker does not offer any amount of discounts unlike its competitors. Hence they feel the prospective customers are brand loyalists and thorough petrol heads who know the models in and out. Sometimes they even surprise the executives with their updated information about the models.

Industrialists and senior employees are the main customers who buy this brand. This is mainly due to the high cost of the models. The customers mainly fall in the 30 to 50 years age group barring some exceptions. The main views of the customers were that the exterior design was mind blowing especially due to its uniqueness and rarity. Thus making it an exclusive brand.



2 USER RESEARCH

Harish H H



Professional

Age: 44

Mercedes Benz A class

Mitsubishi Pajero

Mr Harish is an automobile enthusiast and also an avid cyclist. His hobby is to restore vintage motorcycles. He purchased the A class in 2013. He has driven 56000 km in it. He chose this vehicle mainly due to its packaging. He finds it easy to travel in the city with this vehicle. It is very easy to park as well as squeeze in tight market places. He feels the vehicle would easily last for another six years without giving any problem.

He feels the vehicle is very robust and gives a feeling of safety whenever you are driving it. The headlamps and tail lamps is his personal favorite. He calls them a piece of jewelry. Jaguars are rare to spot in the jungle and on the roads according to him. But he says the jaguar have an unmatched styling and are very unique in nature. He too aspires to own a jaguar in the near future. On asking about a hatchback from jaguar he felt the time is right to get one in the market. He says it should be aggressive looking as well as very premium.



3 USER RESEARCH

Dilip Jain



Entrepreneur

Age: 38

Mercedes Benz E220

BMW 1Series

MrDilip is a through petrol head. He has owned six cars before his current rides. He has extensively driven on the roads of our country as well as the United Kingdom. He had previously owned the Nissan GTR, a Subaru Imprezza, Mitsubishi lancer and the Jaguar MK2.

He had some interesting observations about premium cars. He says Mercedes feels very strong from outside. It is reflected by its lesser curves on the exterior. The interiors are plain and simple however they still retain the quality and texture even after 20 years of use.

An Audi appears like a hot chic. Something like a babe who you would love to date. But I have noticed the interiors tend to wear with out very quickly owing to our harsh climate. Especially the chrome strips in the dashboard lose their sheen within months of use.

Jaguar is a class apart. I feel it looks like an aggressive cat in an elegant and sophisticated form. Its subtle curves and unique design always have been my object of desire. I brought the 1 series because of lack of parking space in the city. I choose it over the A class because of its stance. It look sleek and less bulky. It also performs marginally better. Lack of leg room in the rear and an impractical boot are the only pain points in this vehicle.



4 USER

MithunServegar

Cardiologist

RESEARCH



Age: 31

Mercedes Benz E220

Jaguar XF

MrMithun is a cardiologist. He was introduced to the world of automobiles at a very young age. He learnt driving at the age of 18. A Skoda Octavia was his first car during his college days. In spite of being in the medical profession he likes to get his hands dirty on cars and bikes. He owns a jeep and he regularly services it himself on weekends.

He purchased the Jaguar XF as soon as it was launched in the Indian market. He in fact was waiting for Jaguar to be launched in India. He likes the exterior styling of Jaguars. He says the design is next to none. The jaguar reeks of class. He gets a feeling of nobility whenever he drives it.

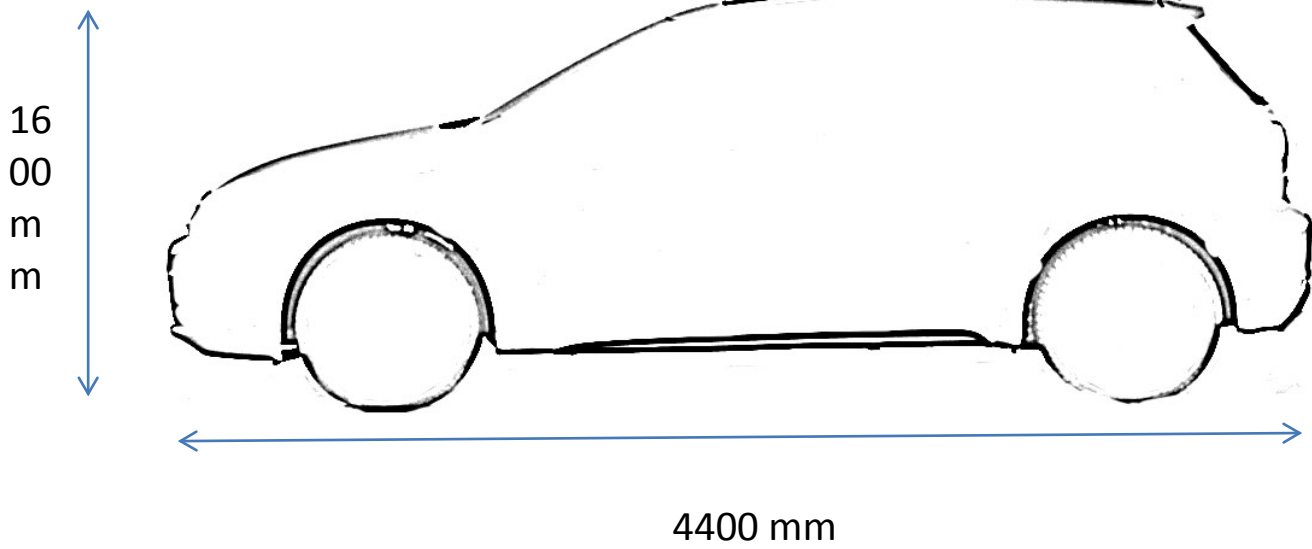
A hatch back from Jaguar should not deviate much from the current design language of Jaguar. It should be tighter and should have a very aggressive stance. The premium look and feel should not be compromised. A hatch back would certainly shake up the market and would be a trend setter.

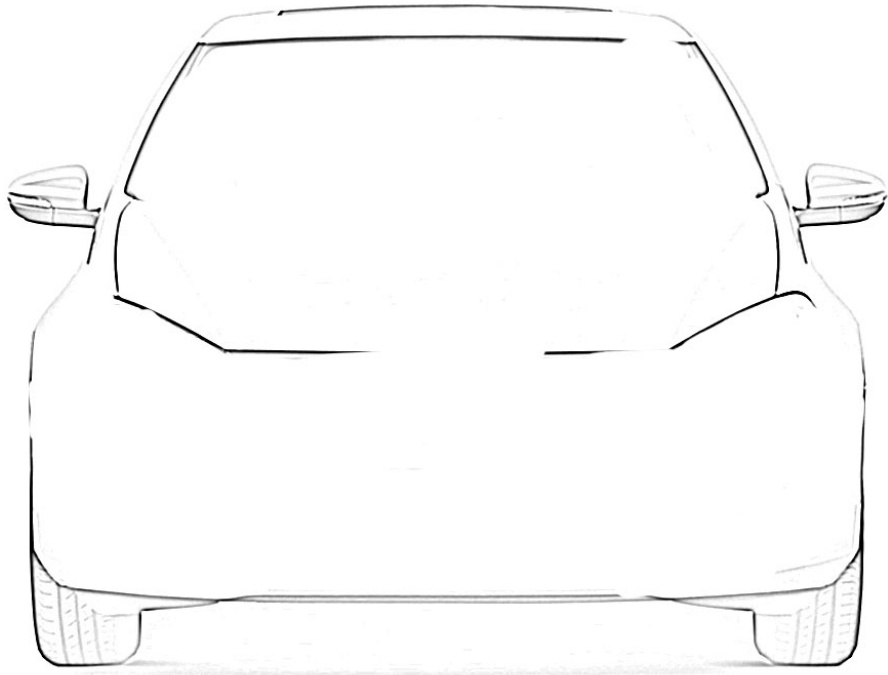


Design Brief

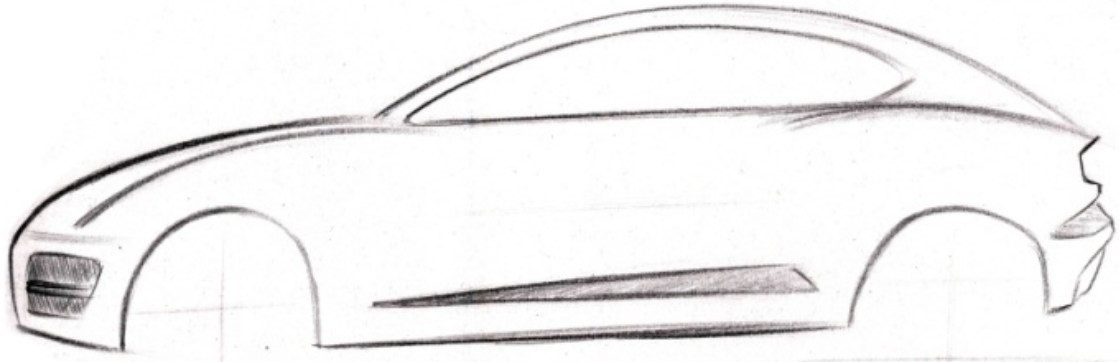
As the recent customer trend of compact being equated to cool and trendy in India, there is a growing need for Jaguar to design a compact luxury car with a focus on the exterior aesthetics

Maximum Dimensions

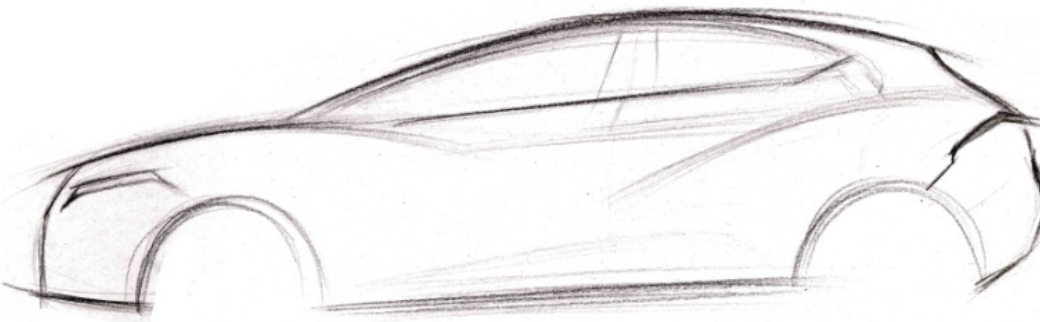
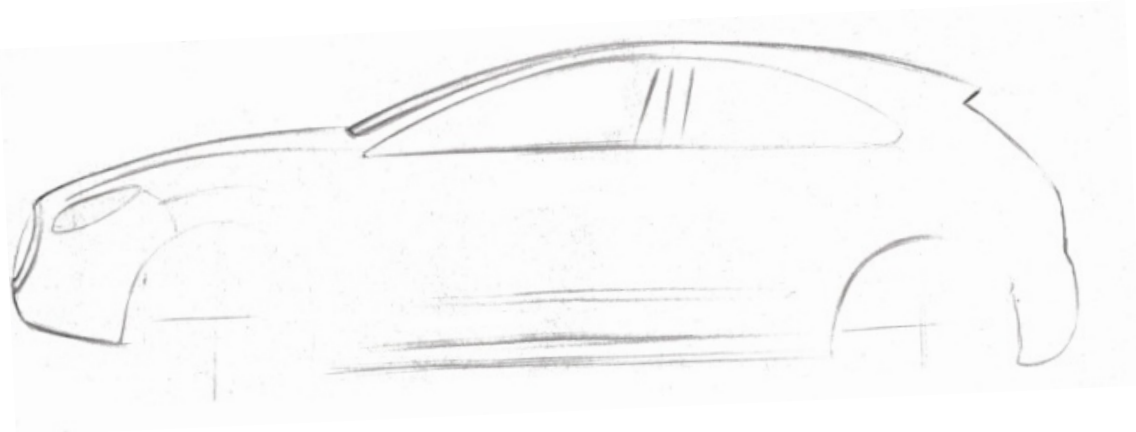
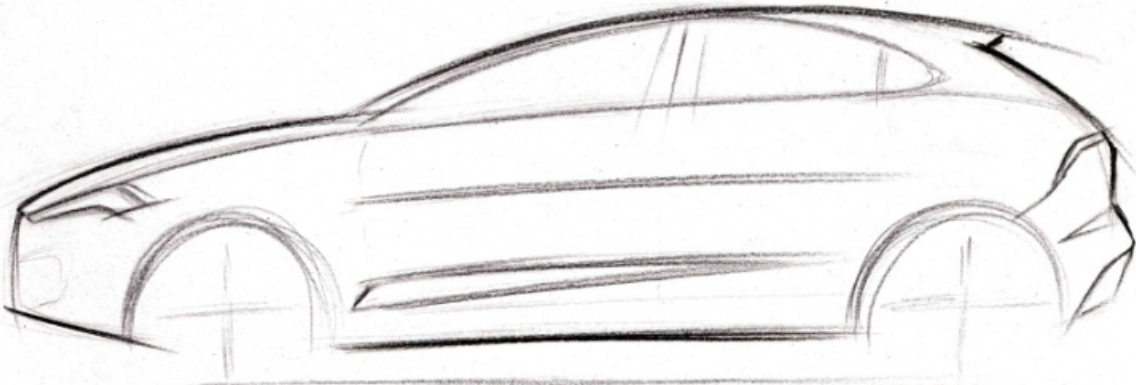




1800 mm

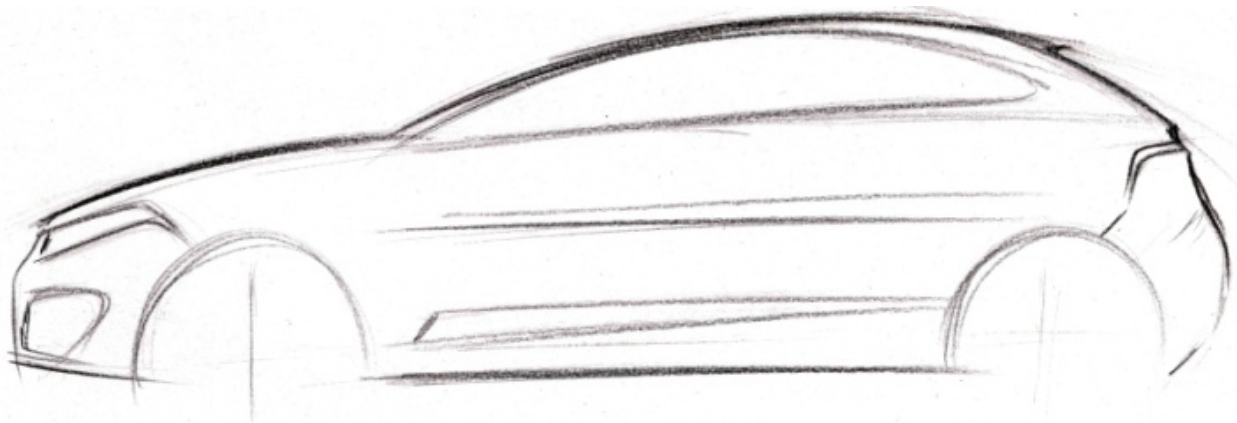


A long single shoulder line running along the side profile to provide an uncluttered look.

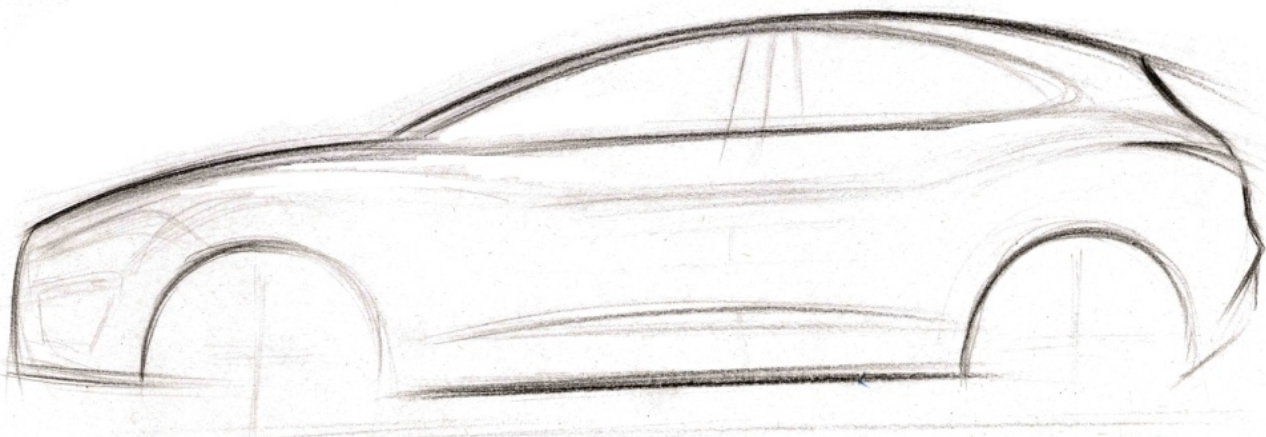




Side profile reflects the subtle movement of a Jaguar. The lowered rear end enhances the curves.



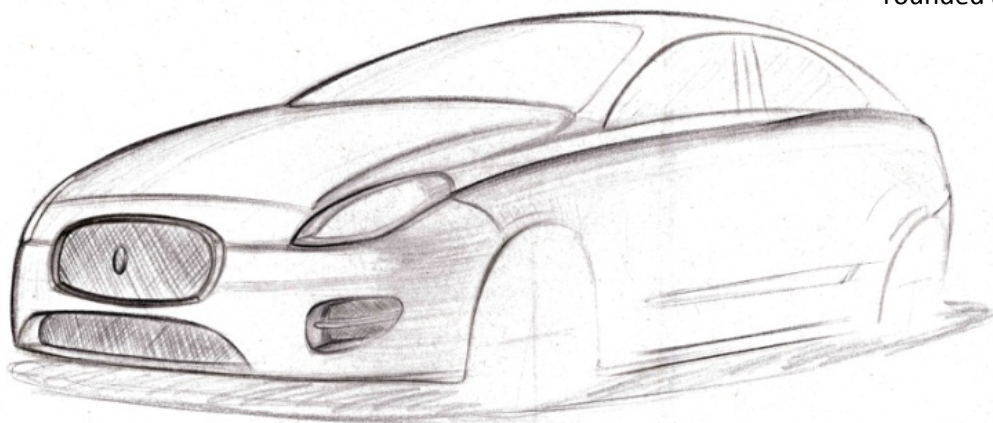
Higher belt line for a sporty look. The higher boot line is for a fast moving appearance.



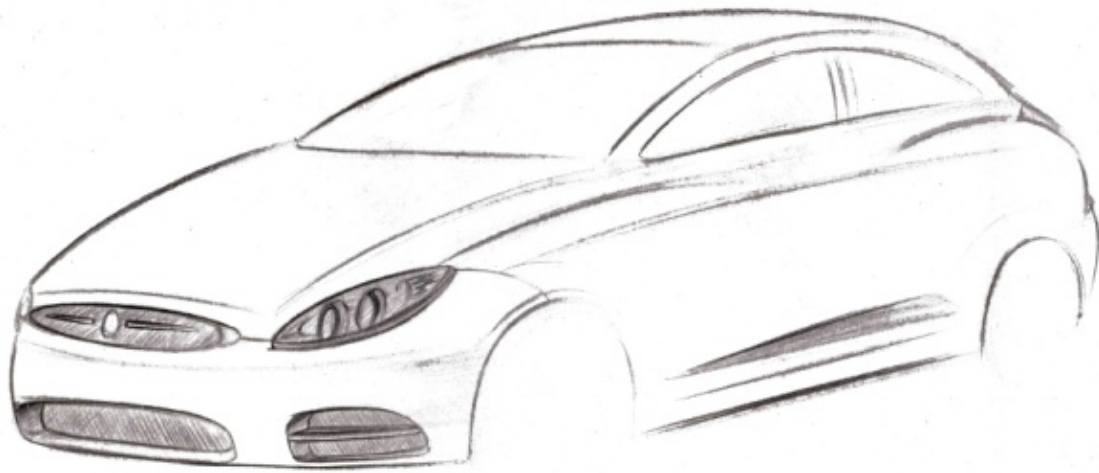
Higher beltline coupled with muscular arches and a curvy boot for an aggressive stance. Note the deliberate slicing of bumper for a layered appearance as well as to improve aerodynamics.



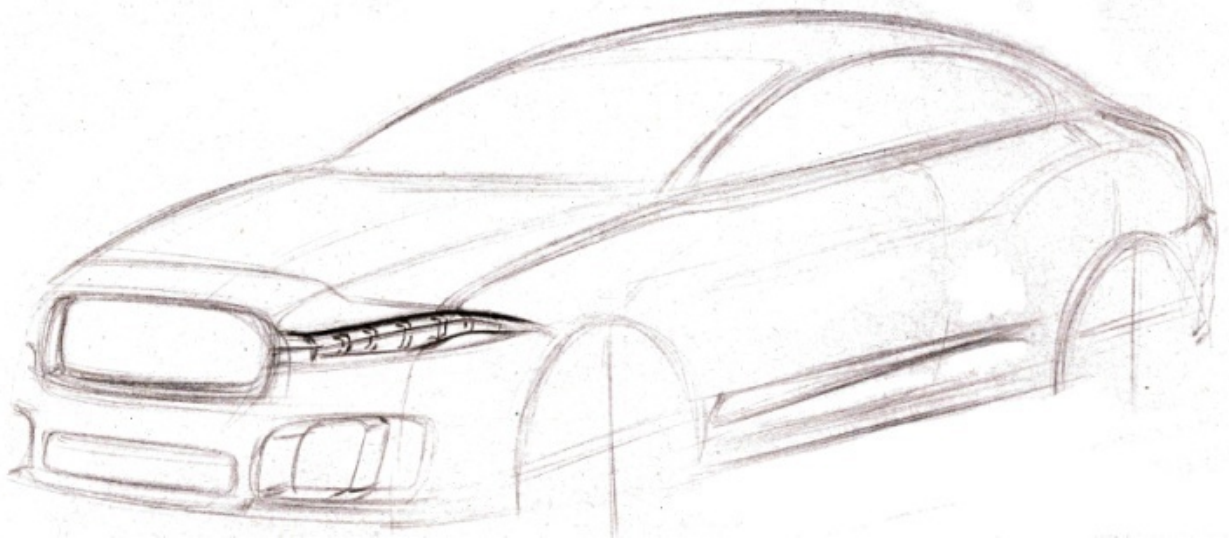
Swept back headlamps and the traditional jaguar grille for an understated premium look.



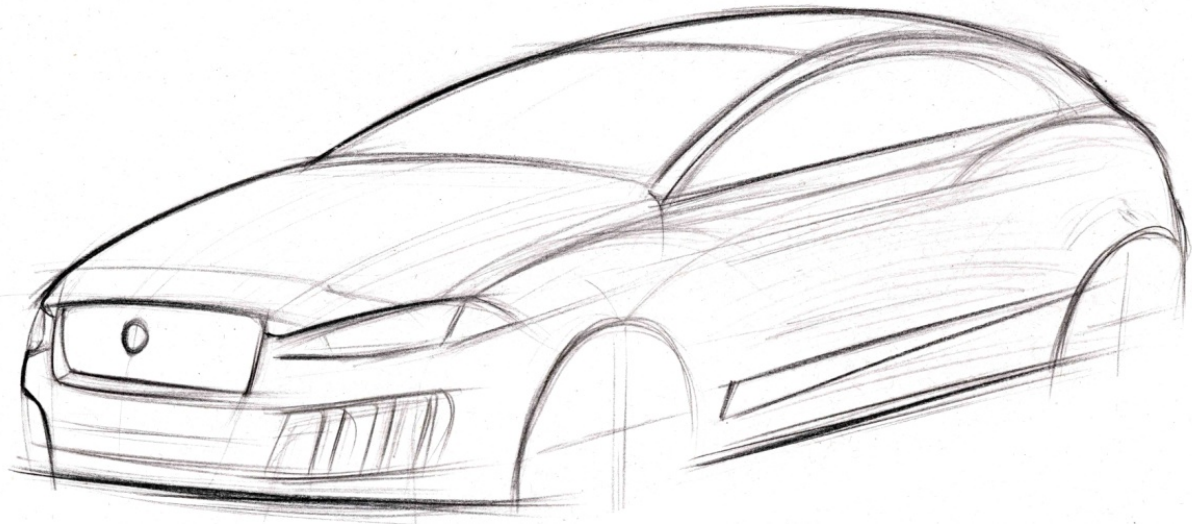
Swept back headlamps continue with the falling shoulder line and curves out at the edge thus giving a rounded appearance.



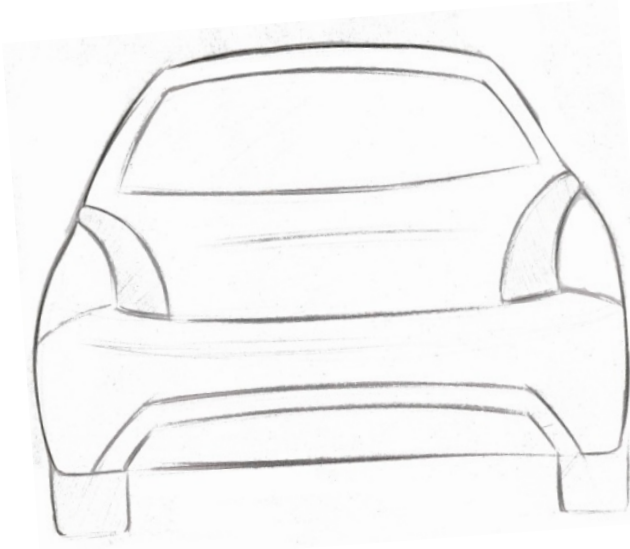
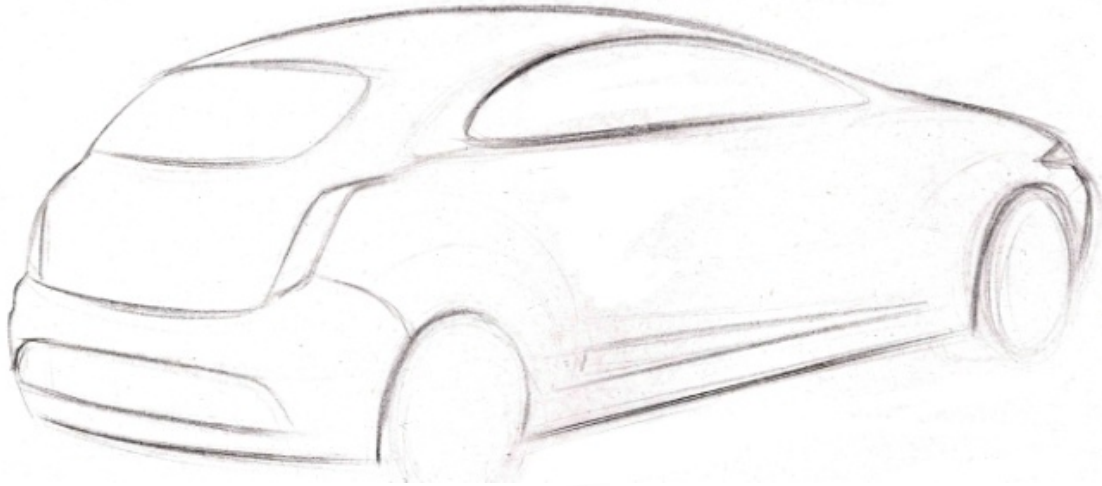
The 90's XK grille coupled with fish eyed headlamps and a prominent air dam with horizontal slats for a mean look.



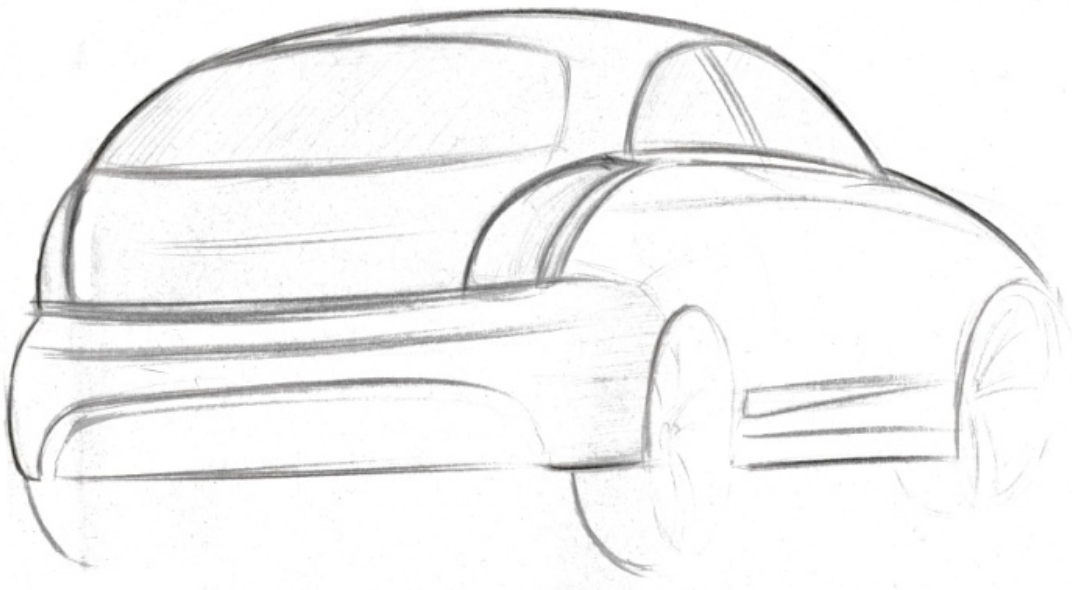
The current generation Jaguar grille coupled with a futuristic pipe slat headlamp for added sleekness to appear very evasive.

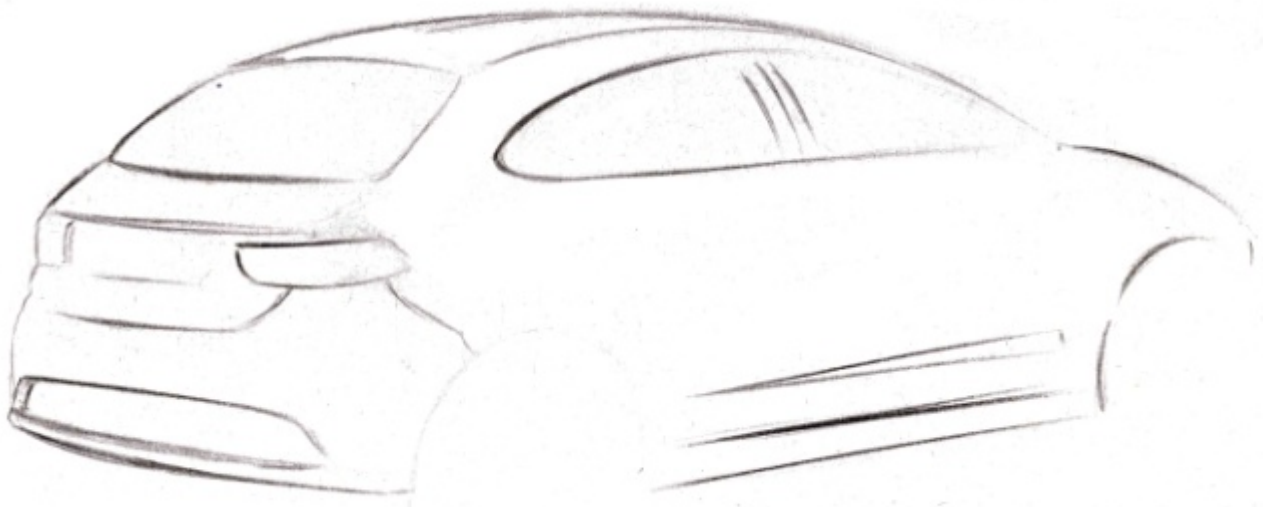


Reduced size of the grille for added sleekness. Elimination of the air dam and addition of the vertical slats for a layering effect.

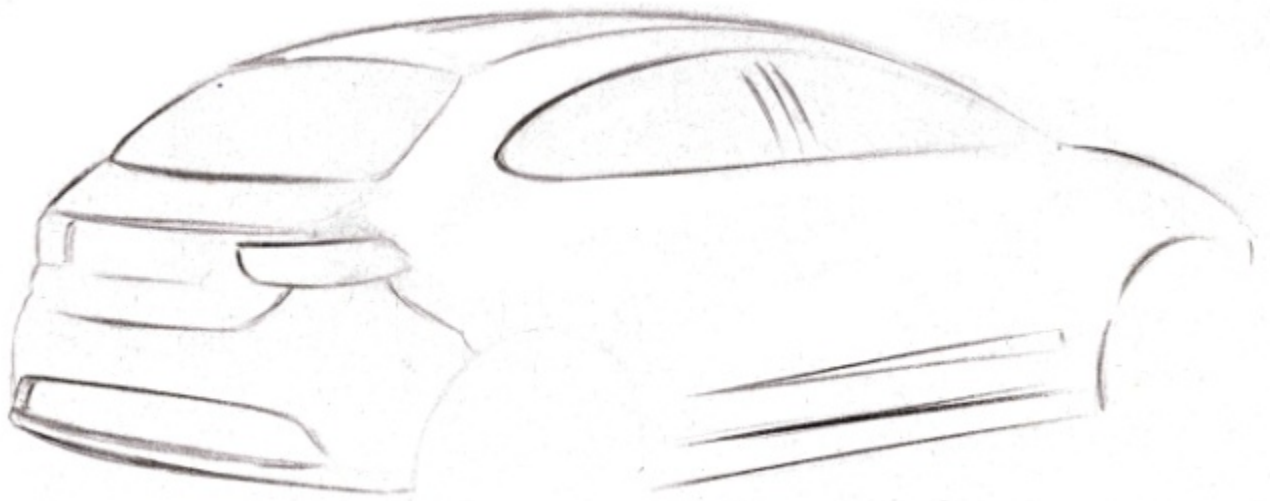


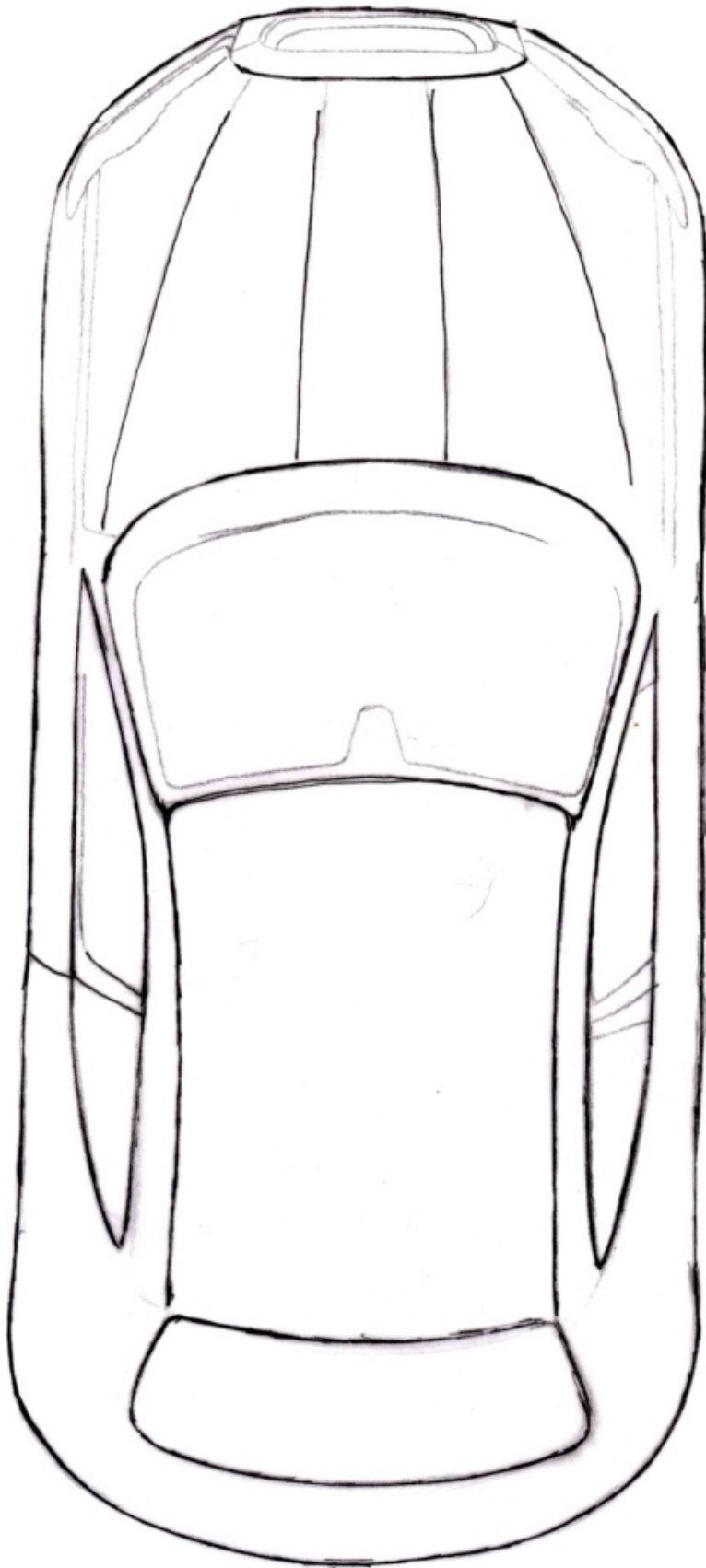
Tail-lamps inspired from the current generation Jaguar XJ with a very thick rounded C pillar.



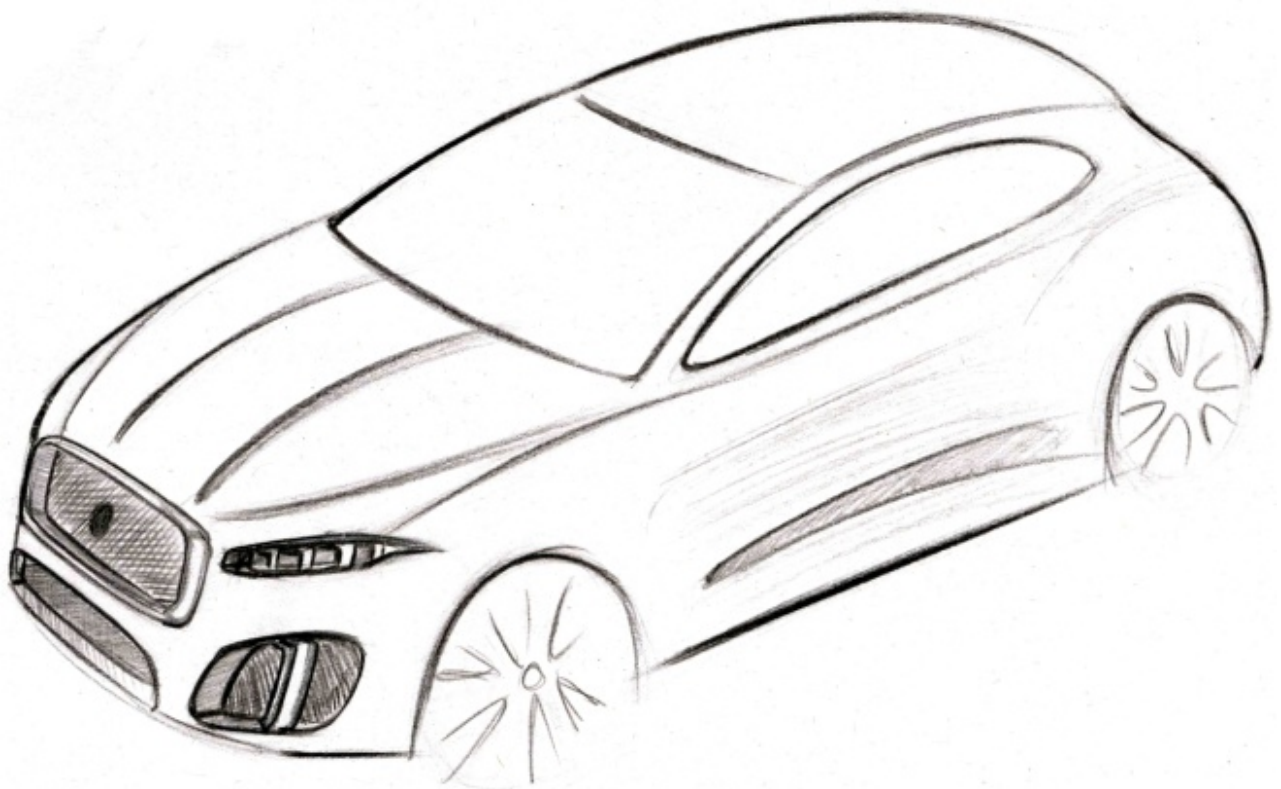


The rear end is the most crucial part of the design. Car has been taken to keep the curve tight.e





The converging lines on the bonnet add muscularity to the otherwise sleek form. The rounded curves on the rear subtly teamed up with flared wheel arches increase the volume at the rear. Thus giving a very cat like form when viewed from the top.



When viewed from the top ¾th view the silhouette gives a hint of a leaping cat. The converging lines on the bonnet add muscularity to the front end. The shortened head lamps with progressive divisions give a feeling of depth. The flared wheel arches in the rear end resemble the hind portion of a cat. The small daylight opening with chrome detailing increases the sporty appeal of the Jaguar.



Pencil shading has been done to understand the various curvatures on the surface. The mid portion of the model below the character line and above the running board has a deep caving so as to increase the flow of air through the body thus improving aerodynamics. The front end has been treated with trendy air dams with a horizontal air controller to direct the flow of air into the engine compartment and below the vehicle body. These air dams are extra huge. The headlamps are given an extra curve to make it more expressive. More sections have been added to increase the depth in the headlamps thus giving it a robotic image conforming to the future automotive trends.



The rear end has been given a SUV like treatment. Hatchback with looks similar to a crossover would be a trend of the future. The high shoulder line at the end of the rear screen raises the rear profile considerably. A huge rear air dam has been provided to accommodate dual exhausts for a sporty look.



The curvy surface of the vehicle is enhanced by the addition of flared rear wheel arch and minimal noise on the remaining side profile.

5. Physical Model





6.Conclusion

This project has helped me understand the history of an automaker and also the design language followed by the automaker since its inception. A study of the design trends followed in the past, present and future has been done for a better design understanding. An extensive research along the length and breadth of the was done to understand the customer perception and also their aspiration for owning a premium brand.

In this project I have got an opportunity to improve my skills especially on form generation, ideation, aesthetic appeal and sketching and rendering. The outcome of the project is a realistic product which can be brought out in the market with least amount of tweaking owing to production constraints.

Reference

1. History of Jaguar, <http://exoticcars.about.com/od/overviewsofmaker1/p/JagHistory.htm>, 03-03-2015.
2. Jaguar logo, <http://autotribute.com>, 03-03-2015.
3. Jaguar XK 120 1950, <http://fashionnews/zalando/co.uk>, 03-03-2015.
4. Jaguar 120C, <http://fineartamerica.com>, 03-03-2015.
5. Jaguar D type, <https://www.bigpinekey.com/wednesday-march-26-2013>, 04-03-2015.
6. Jaguar E type, <https://www.pinterest.com/pin/376824693790990801>, 05-03-2015.
7. Jaguar XJ 1980, http://www.autoevolution.com/cars/jaguar-xj-1979.html#aeng_jaguar-xj-1982-34, 06-03-2015.
8. Jaguar X type 2000, <http://ts3.mm.bing.net/th?id=JN.wqIzJg60cyMR8b2gVhiUHw>, 06-03-2015.
9. Jaguar F type 2012, <http://www.boldride.com/ride/2015/jaguar-f-type-coupe>, 06-03-2015.
10. Jaguar XF, <http://www.autocar.co.uk/car-review/jaguar/xf>, 07-03-2015.
11. Mercedes A class, <http://www.team-bhp.com/forum/official-new-car-reviews/137683-mercedes-class-official-review.html>, 09-03-2015.
12. BMW 1 Series, <http://www.autocarindia.com/auto-reviews/new-bmw-1-series-review-test-drive-360298.aspx>, 23-03-2015.
13. Audi A1, <http://www.autocar.co.uk/car-review/audi/a1>, 18-03-2015.
14. BMW vs Mercedes, <http://overdrive.in/news/spec-comparo-audi-a3-vs-mercedes-benz-a-class-vs-bmw-1-series>, 23-03-2015.

