

FAQ's for Students

Dear...you!

This set of responses has been online for many years and is, in the most part, still valid.

I have updated it now to take into account new questions, not so much because the answers need changing.

I hope it is useful!

Good Luck with your careers!



Many designers and students write to me everyday to ask advice about their career. I try to answer all who write, but perhaps I can save us both some time if first you would please read through this set of responses to what most people ask about..then I can answer your more specific questions. Thanks!

IF YOU ARE INTERESTED IN **CAR DESIGN**:

This is wonderful that you feel a passion for car design! But not easy!! The best car designers are those who cultivate many interests and still seem to know a lot about cars and the history of cars without letting it get in the way of their creativity. How do they do that?

Design is many things to many people, it involves thinking and inventing and drawing and presenting and selling your ideas, but when you ask “**What is Design?**” the answer is: “**Design is Meaning**”.

This is what the product semantics say, and every designer’s job is first and foremost to capture “meaning” in their creations. This is not just “Function”(although without a function a design is a perhaps a piece of art but not much more), it is the significance that makes a car worth so much more than just “transportation”. One of the reasons that in many places in the world cars have lost their appeal is that they no longer carry the meanings of value they once did. Perhaps you—as a new car designer—can change that!!

Since people look to designers to give their lives and the experiences and products in them “Meaning” sometimes—as in the case of cars—the meaning is “This car is me!”. There are very few things that resonate the personality of the owner like a car does. (In fact I often call cars “Avatars”—representations of a person in another form).

As a designer you will be asked to mediate the world for people through your creativity... so, the more you know about the world the better it is. I am often asked “*Do I need to be an expert in cars to be a car designer?*” It is not exactly like asking “*Do I need to know how a piano is made to compose music?*” but it is close—of course knowing something about taking good care of a piano would help you keep it in tune but that is not too critical for composing within the 88 keys’ range. It does not really help to be an expert in cars, but let your passion for cars inspire you to draw them. Going back to the music/piano analogy, if you aren’t a fan of music you will have a hard time motivating yourself to practice and practice and practice those scales and etudes again and again until *making* music flows naturally. From *making* to *composing* the steps are definitely smoother than from poor music making ability to composing. Some—but not all—of the best car designers I ever met could effortlessly draw any historical car that came to their mind, but that knowledge did not get in the way of them imagining and creating as yet unknown cars, just like a good pianist should be able to play the evergreens from memory or by sightreading.

But as I said, it’s *everything else besides cars* that you bring to your design creativity that becomes the most important tool in your toolkit. If between studies you can work in jobs that are diverse and cultivate experiences that help you to “see humanity through different lenses”, this is also very good. Learn the story of car design; if you are truly passionate there are many stories and examples to study.

Liking to *draw* cars is fundamental to the job of a car designer; if you like to talk about cars and think about cars and examine the technical details of cars and know the history of cars—but you don’t want to spend hours drawing them—then maybe car design is not for you. This does not mean every sketch is supposed to be a car no one has seen before. Drawing *existing* cars is an excellent exercise. As mentioned above, I like to compare learning car design to learning the piano; you wouldn’t expect that just liking music and listening to music would allow you to instantly sit down and play it, would you? It takes many many hours of practice just to make the first piece come out half right; those hours of getting your fingers to do what your mind wants them to do without thinking. Betty Edwards wrote a series of books beginning with “Drawing on the Right Side of the Brain” I



reccomend you reading and doing her exercises to familiarize yourself with the process of drawing. Try to understand drawing existing or historical cars as just that: “etudes” to improve your skills like those a pianist learns. Start a sketchbook TODAY and decide on a brand that you like... can you sketch every car they have made? After 1000 pages of that you will have improved your sketching at least! If you wanted to work at a place like Ferrari or Porsche you can be sure those designers and design managers would welcome an example of your passion and knowledge of their brand like that!

IF YOU ARE WONDERING ABOUT **THE BEST DESIGN SCHOOL:**

To find out more about design school and entering them, my advice is to check out www.ccardesignnews.com or www.carbodydesign.com or other sources on the web. There are many schools all over the world with varying degrees of cost and requirements. Write to them and talk to their admission people... find out about their success rate and what it takes to get in. Many schools are “trade schools”, they will teach you the skills but not award a degree recognized by other authorities or other universities. This may or may not be a problem; of course a job with no degree is better than a degree with no job, but often the hiring departments will not bring you into the companies for the same pay without a degree. You can also find courses and tutorials on the web for little or no money to teach you the drawing basics.

Of course learning anything takes time and money. But that might not always be the same everywhere. Not too many companies sponsor students directly anymore, but ask the school about scholarships or grants. I went through Art Center on a generous grant from Ford; they didn't even ask that I join them when I was done! To get the grants you have to show some need (you are poor) and competency (you have a portfolio of work that shows your potential)—My parents paid for one year of Art Center and in that time I was able to learn enough and create enough examples to convince the scholarship board that gave out the grants.

The importance of a school is dependent on the quality of the students. Poor quality classmates will not help you, but the breadth of design themes you will study and the access the school has to management in the industry is also vital. Are the teachers working professionals? Do they have their own car in production?

I lived with roommates who really forced me to be a better student; they were ahead of me in transportation design classes and knew the tricks and tips and secrets to improving fast. That is a great system if you can find it, both harder and easier than living on your own or with your parents.

IF YOU HAVE DECIDED ON A DESIGN SCHOOL BUT DON'T KNOW **HOW TO** ENTER:

To get into the design schools usually you have to show a portfolio of your work to date...sketches and renderings or paintings and sculptures...all the creative things you do that show your passion for CREATING. If car drawing is not what you are skilled at now, show your other work and the attempts you have made at cars. I even had drafting drawings in my portfolio for Art Center (OK, that was about 1000 years ago). You do not have to be “good” before you get into school—they will make or break you—just enthusiastic and a very hard worker! But naturally the better the portfolio the better your chances of getting in. As I said above, once you are in school there are often scholarship and



internship possibilities available, and all these require an updated and improved portfolio. Showing your progress is much more important than just have made one good drawing.

Draw everything and anything, not just cars. The broader your creative interests and capabilities are, the better. Learn to draw things from a technical viewpoint- a section or an “exploded view”- that shows you can imagine what goes on under the surface. Learn the basics of technical drawings.

IF YOU ARE WONDERING IF YOU NEED TO KNOW CAD OR **COMPUTER MODELING OR RENDERING PROGRAMS BEFORE SCHOOL:**

Like any set of skills the more you know going into a learning situation the faster you can move ahead, and each school will give you their recommend or required set of abilities you should have. BUT—the real importance is your ability to demonstrate creativity and to communicate it. A pencil will do. There is an unspoken “rule of thumb” :your drawings and paintings are more important than your computer work... but only if they are GOOD! Conversely, the most complex computer skills will not be impressive if what you are making is dull and unoriginal. Many many times I have heard instructors and managers say, “Too bad the person didn’t spend more time drawing instead of wasting so much time behind a computer screen”: Just because you loved making it seem real in a computer does not mean any one else will enjoy looking at it...do the good design part first before lots of rendering time is invested. Nothing is less impressive than “My First Alias”.

IF YOU ARE THINKING OF STARTING A **SKETCHBOOK** AND WANT TO KNOW HOW I DO IT:

You can use any sort of bound-together paper for a sketchbook, they don’t even have to be blank pages (although using lined writing paper tells other people all your sketches are from your Junior High School mathematics workbook—stick to blank at the beginning). I have used Moleskins of different formats, agenda and diaries, backs of calendars (great if you need big blank sheets to draw on)—about anything. What I like best are the sketchbooks that fit under your coat and down the back of your pants...I don’t like to carry things. That way I always have it handy and it doesn’t annoy anyone (but it does surprise them when I pull it out from under my coat!). The best format I have found for all of that is 25cm x 17.5cm (10" x 7") with off-white 130g paper...smooth with just a hint of tooth and slight yellow cast. I look for paper that takes ballpoint and the non-permanent fine-tip pens that I like to use nicely without smearing (but of course the ink in the paper will deteriorate over time—be prepared for that). Windsor Newton used to make these sketchbooks but now I have my own made because I can’t find them anywhere. But any paper will do. Try to find spiral bindings because they let you fold back the pages easier for drawing. Some sketchbooks are perforated for easy tear-out but these tend to fall out so I don’t like those. If you are going for the down-the-back-of-the-pants technique then try gluing a stiff piece of cardboard to the soft cover to give it extra stiffness...otherwise the curve of your back will roll your sketchbook into a tube.

Pens of felt tip, brush, or ball point are challenging and take some time to master—but they are very satisfying and look great (and scan well if you are going to copy them into a computer layout). Pencils are handy so most young persons use them, but unfortunately they tend to rely on them to the exclusion of other techniques. The graphite of a pencil can be beautiful but for many drawings it is too reflective and weak—try using a hard black colored pencil like a Prismacolor instead. These are wax pencils and don’t erase well, so treat them with respect too! A nice technique they teach



in school is to use just one colored pencil and the same colored marker. (Dark colors tend to work better for this. Use the colored pencil for the lines and the shading and the marker for the darks like you would a black marker.) Some colored pencils turn into water colors when wet, these can be really fascinating but for quick sketching not always needed. Try out many techniques. But think about the page while you draw, try to organize the images on it, backgrounds, etc. Don't cram all the pages with drawings, let the paper work for you. Practise your handwriting in the notes you make—these will reflect how well you respect the need to seamlessly (legibly) communicate your ideas. Most designers write not with cursive but in all caps like architects have taught us. Come up with a signature people can read—different from the one you sign documents with (but spare us your personal logo).

Draw standing up if you want to use all the resources your body has to offer. Most design students use a cheap door as a table and prop it up so they can work standing or on a stool. Sitting “in” a chair does not help you to draw fluidly. Remember one of the fundamental rules of drawing: your shoulder is the pivot for long straight lines, the elbow for medium curves, and the wrist for tight and small curves—you can get the most from these natural axis if you stand. If you are really serious about cars then keep one cheap sketchbook with nothing in it but cubes, circles, and ellipses...hundreds and hundreds of circles and ellipses and cubes drawn in perspective (best are cubes with ellipses on the surfaces in proper perspective). You must practice this so often that your arm and your hand just naturally want to draw a circle and an ellipse. This is like being able to play scales on the piano. Not the part of the piece where you want to stumble!

I am going to repeat myself here: *Draw everything and anything, not just cars. The broader your creative interests and capabilities are, the better.* Want to do “life drawing” and can't afford a model? Go with your wife or sister or mother to a clothes store and draw the mannequins while you wait for them. Cartoons, caricatures, architecture, plants, people, boats...anything. It is no secret that it was my sketchbooks that got me my job with GM when they came school to interview—not my project portfolio. Keep at it your whole life; I regret all the lapses in my sketch-book sketching!!

While you are doing all this try to learn what it means to give a critique and have your work critiqued. They used to say, “If you want to hear something nice go ask you mother.” I will confess I am a bit brutal when it comes to giving critiques online—it is too easy to say what I think. In re-world face-to-face reviews I try to be more political and still get the message across.

IF YOU DO NOT KNOW WHAT TO DO **BEFORE** GETTING INTO A DESIGN SCHOOL:

Before entering a design school you can get some of the requirements out of the way at a “normal” University or College. Classes in literature, creative writing, theatre, psychology, natural sciences, physics...all of it helps you later. I took two years of classes at the University of Wisconsin before going to the Art Centre College of Design. They turned out to be some of the best “design” lessons I ever had! Ask the design college admissions officer for requirements and the ability to transfer credits. If you are very young, just start drawing sketches or making your first “technical drawings” with a T-square and triangle or even practice elegant and precise lettering (known as “calligraphy”... every written language- western, Asian, Persian, Indian, everywhere lends itself to beautiful lettering...). Some of it may wind up in your portfolio but all of this is just practice for you to get to feel comfortable expressing and entertaining yourself with a pen or pencil. As I said before, don't get lost in computer



drawing programs, there is time later to find your way there. Drawing skills with no computer skill is better than computer skills and no drawing skills. Excuse me if I am repeating myself here.

What else is important? If you are in high school, I advise you make an effort at joining the “speech and debate” clubs and teams that hone your speaking, arguing, and thinking-on-you-feet skills. Take theatre or dance to become comfortable with many eyes watching you – as well as the experience of exploring and becoming a “character” that is not you. After all, you want your cars to be that as well for thousands of customers, right? Play-acting is a good thing!

Very many of the top, most respected car designers are musicians; always keep playing even as your drawing skills improve. But the same is true for any ability you have and are passionate about doing yourself (not just watching); sports, cooking, dance, welding.... Keep and polish these skills as part of your whole persona; take “shop” classes to learn to operate tools.

If you are in college now, take literature and creative writing courses; they will teach you skills of composition, critique and self-editing which are fundamental to design. Better that than art history if you are forced to make a choice. Classes in Psychology and philosophy are excellent as well, courses that teach how and why people do what they do. Study architecture if you can—it leads all design professions. Design directors want people they can discuss with in an intelligent manner, people who show them new ways to look at the world, and in a car company you are paid for your opinion—always remember that “*I dunno*” is not acceptable!!—so the more you know the better.

(If you are good at something—video games, singing, telling jokes—try and think about what it is that makes you so good. Can you extract the lessons of that skill and apply them somewhere else? I have a friend who interviews MBAs and that is the sort of question he asks them; it is also the sort of question that you should think about to get into the habit to analyzing what others—or you yourself—take for granted.)

IF YOU WONDER HOW A CRITIQUE OF A **CAR DESIGN MANAGER** WORKS:

More than once I have been asked about the critiques and feedback that students get from visiting car design managers. Often there is a concern that “*They ask us to be thinkers and then they only go for the hot sketch! Why is that?*” There seems to be a discrepancy between the “walk and the talk”—as if the design managers don’t mean what they say. Of course, the reality is much more complex, and the managers are trying to help without over-helping, brief the students without over confining them, and encourage a rounded 360-degree skill set without derailing artistic talent. Imagine it like this: you are selling something to the design managers like someone is selling a car to a customer. Some things they expect—like cupholders, and if there are a few more cupholders than expected it is better, but not necessarily if they are not helpful. In the same way, development sketches and artwork in a project are like cupholders—you better have them, but 300 are not necessarily better than having 100. Particularly if they are crappy. But if you have few or none—like the cupholders—you are going to upset the client.

Most important is that the cupholders/sketches-artwork are enough, in the right spots at the right moment and REALLY WORK to improve the experience (enjoying a car or enjoying your design). Just putting tons of almost identical images on a page doesn’t impress anyone, it risks showing you have no way to guide yourself, you do not prioritize, and that it’s not useful creativity your audience is looking at but “etudes”—just “practice drawings”.



But like in buying the car, the customer always hopes for “smileys” (things that make you smile) that can really make it a great deal. If the seller tells you “Hey, I’ll throw in a free set of alloy wheels for you!” you think it is a super special buy. But maybe he has to get the hint to do so, so while you are looking you might imply that the car is ok but “the stock wheels are...hmmm...let me think” to give him the idea to consider giving you the alloys. Likewise, “thinking” is not what is really expected from students who are just trying to master the skills of drawing or basic computer modelling/rendering, but it *is* hoped for! And the visiting design managers may overdo their emphasis on this aspect in the hopes that SOMEONE shows some intellect! As I say in the other parts of this FAQ, there is a “rule of thumb” that guides priorities: Good thinking in a design project without supportive artwork is less interesting than good artwork with not particularly original thinking, but great thinking AND great artwork beats even the mere “fantastic artwork”—if the fantastic stuff is not intelligent and original. Of course, fantastic artwork combined with a great intellectual approach is unbeatable.

Also look at it from the managers self-preservation point of view. They need to make the right hiring choices. And it is ever so hard to predict how someone will perform on the job given the long learning phase of the culture—there is not enough “minor league” or lower divisions to foster trained improvement. If you watch competitions from sports to online gaming, one of the basic premises is that people who are really, really good make the reasons why they are good invisible. Effortlessness is a strong measure of skill; truly gifted talents make it look so simple as if they aren’t trying or it really isn’t so hard... that is why it is so difficult to evaluate talent and find what makes someone truly good; you only notice when stuff isn’t working. That is why statistical evaluation in sports has taken over; it is easier to argue. 90% of leaders only understand what is needed in the talent they are reviewing hindsight; it is hard to look forward—true greatness lies in the small, small details that you must be hyper attuned to register. Going for the hot sketches is an obvious marker; hiring on intangibles is so much more difficult. You get enough of those choices wrong and you have problems as a manager.

There is more to the hopes the design managers come to the students with: they hope to be *inspired*. You may think they have seen everything, but they hope they haven’t and that it will be you who make the whole trip to your school worthwhile. You may think that they are stingy with the jobs and don’t want to hire anyone, but the truth is really this: it is the design manager’s secret dream to find a young designer who is a “diamond in the rough”; a student so evidently talented and full of potential that they have to make every sacrifice possible to get their company to hire that person!

You want to be that person! That is one of the great benefits of design schools; they bring together these types of meetings. You should really give it your best to be the one that stands out. You could do worse than to take a page from the playbook of one of the most stand-out designers of all time, Syd Mead. The great car designer-futurist was famed for doing every assignment in school twice—bringing in 2x the number of requested sketches or renderings or whatever. Can you do that too? Sure!

IF YOU WOULD LIKE TO KNOW HOW TO **GET A JOB** AS CAR DESIGNER:

There are many jobs in car design but at the major manufacturers most go to colleague graduates (BA, BS, or Masters) from a design school who show a portfolio of original designs. My college time took about six years! As I said some design schools do not give you a transferable degree. This is not so problematic for getting a job but may reduce your starting pay. Of course, often they are less expensive to attend, so you must weight the risk and benefits yourself... a great degree with no job is not helping anyone!



There is an unspoken “rule of thumb” : your portfolio outweighs (is more important than) your grades, your sketches outweigh your renderings, your handwork outweigh your computer work... but only if they are GOOD! Show your development in your portfolio, keep it fresh looking and varied, demonstrate the many sides of yourself and your skills, cleanliness counts, in an interview and a drawing; make yourself and all your family and supporters proud! Try to get a job in the car studio as an intern, this could be your best lead to getting a job. Put yourself in the mindset of the studio manager or senior designer you are interviewing with... what is he asking himself about you?

_ “If he/she says they are passionate about our brand, why don't they draw cars for it in their portfolio?”

_ “If he/she wants to design our future cars why are all the sketches just like our last show car?”

_ “If they are passionate about cars why are there no drawings of old ones?”

_ “Would this person know what to do with a technical drawing if I gave him one?”

_ “Is this person afraid of color?” (or, conversely, “does this person has any refined sense of color?”)

IF YOU ARE AFRAID THAT THE JOB OF A CAR DESIGNER IS TOO “NARROW” AND RESTRICTIVE:

I hear this concern more and more. Obviously doing “real car design” for most young persons means getting paid to do so at a real car company; not at a garage down the street. Equally obvious is the fact that the jobs are scarce and the chances slim of getting that “dream job”. My opinion is that for great talent there has always been a job opening; that for the dedicated and the passionate the skills they learn as car designers can be applied anywhere on any problem. I suggest you read Sir Kenneth Clark's great book “The Nude” which is all about the nude in art throughout history. He says that the reason the gothic artists like Duerer could draw great rabbits but made such deplorable drawings of naked people is because a “nude” is not a person with no clothes on but is an idea, “...an idea that their culture could not assimilate.” I would ask you to think about car design the same way, it is first and foremost an “idea” and only secondarily the shape we give to something with wheels and a door handle. (My copy of Clark's book is full of notes; I like to take out the word “nude” in the text and insert the word “car” because the meaning he is conveying almost always is transferable and suddenly becomes tremendously inspiring!)

Is car design too limiting and narrow? Has everything already been done? Returning to our metaphor of learning to play the piano and car designing and consider that fantastic instrument for a minute: 88 keys and a few pedals. Sounds pretty limiting, no? But does anyone think all that can be said and done with a piano is over; no new music to be written or styles developed? Unless we get an 89th key? Of course not.

One of my problems with car designers today (not just the students) is that they think it is enough if they make their cars look like everyone elses with some minor difference that they can call their own. This is as if to say “Mozart on the keyboard was as good as it gets and now we will all compose music that sounds the same.” That is not “Endeavoring” to create—trying your best every time to push the boundaries of your own limits and that of the genre, and that is not how a “True Car Designers” operates. (note the capital letters)



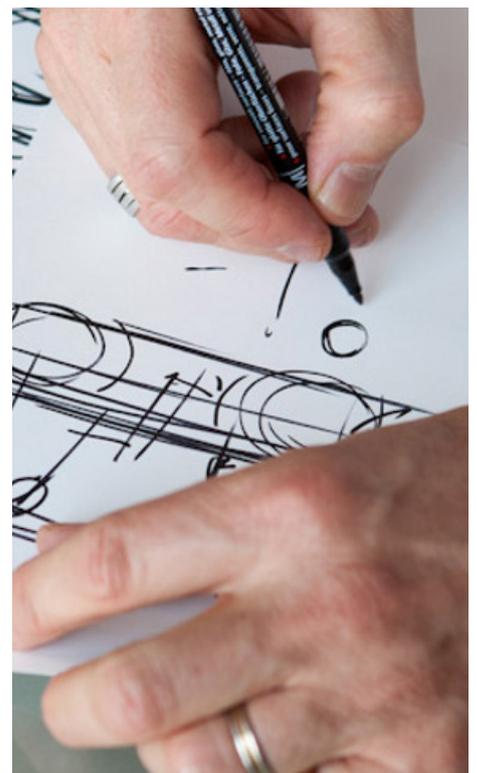
“True Car Designers” have embraced the pain and the joy; the sacrifice and reward in *exceeding the limitations in their own minds*...that is what it means to “Endeavor”. Their world is that of emotional personification through surface, geometry, and sculpture... all of which can be applied to life and objects without wheels too. Need an example? I would argue that August Eiffel with his Parisian landmark tower is a “True Car Designer” (it is a wondrous “sculpture”, both masculine and feminine; symbolizing a nation... and it carries you to the best view in Paris! What “car” wouldn’t want to be all that!?)

If you can learn to understand that “True Car Design” is about confronting the meaning of the word “Endeavor”, then you will see that there is a world of car design out there to be tackled in all walks of life.

IF YOU WANT TO **INTERN** FOR CHRIS BANGLE ASSOCIATES S.R.L.

My company is a design consultancy made up of working professionals and recent graduates. We don’t sponsor students or have fixed programs for internship and collaboration but we do take them into work with us. Our studio is in the countryside, in a peaceful small village in Italy, where it snows in winter! The natural beauty of the landscapes inspires our design work, but you must travel on your own to get places... no public transportation. If you want to submit your cv and your portfolio, we inform you that we can only take into consideration European citizens (or foreign citizen with a valid VISA for Italy, working or interning) older than 21 years old, English speaking and independent from the logistic point of view (accommodation, car...) In this case, please fill our application form and send it together with your cv and a small format of your portfolio at:

contact@chrisbangleassociates.com



TO EVERYBODY

Follow your dreams; if that is what you truly want to be, try to make it and enjoy the journey! You never know if you find the enlightenment that is the "True Car Designer" in you!

Chris Bangle

