



# Zündfolge

Quarter 1, 2021



# BMW





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## Boilerplate

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# KALENDER

The Pandemic has made it difficult to schedule large gatherings. Watch the chapter website to learn what is coming up.

## January 27, Wednesday

**Board Meeting.** All members welcome. Current board meetings are held via Zoom. RSVP to [president@bmwpugetsound.com](mailto:president@bmwpugetsound.com).

## February 24, Wednesday

**Board Meeting.** All members welcome. Current board meetings are held via Zoom. RSVP to [president@bmwpugetsound.com](mailto:president@bmwpugetsound.com).

## March 24, Wednesday

**Board Meeting.** All members welcome. Current board meetings are held via Zoom. RSVP to [president@bmwpugetsound.com](mailto:president@bmwpugetsound.com).

## April 16, Friday

**Track Day at Pacific Raceways**

## April

**Cascade Foothills Tour**

## May 7, Friday

**Track Day at Pacific Raceways**

## May

**Tour to Astoria, OR**

## June 18, Friday

**Track Day at Pacific Raceways**

## June

**British Columbia Club Tour**

## July 8, Thursday

**Track Day at Pacific Raceways**

## July

**Whidbey Island Tour**

## August 20, Friday

**Track Day at Pacific Raceways**

## August

**Sun Mountain Tour**

## September 18, Saturday

**Track Day at The Ridge Motorsports Park.** Our only visit to The Ridge this year.

## September 18, Saturday

**The Ridge Motorsports Park Tour.**

Tour ending at The Ridge for some touring laps of the track.

## October

**Wine Tour to Lake Chelan**

For more information about any event, go to [www.BMWPugetSound.com](http://www.BMWPugetSound.com).

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Please limit phone calls to these volunteers to between the hours of 9:00 am and 9:00 pm

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# President's Column: A Bittersweet New Year



A NEW YEAR IS UPON US. Given the year we just had, I think I can safely assume that all of us are hopeful for better, brighter things in 2021. I know I am. My name is Andy and you may be wondering who I am and why I hacked Dana's column. Except I didn't. Until December 31, I was safely in the background as the Vice President of this Chapter, but unfortunately, due to life circumstances beyond her control, Dana will be moving out of state soon and asked me to step into the president's

chair for what would have been her second year, and I reluctantly accepted.

Many of you may know Dana and her husband, Kelcy, from their many years with the Club (since 2007). She was involved in many events for the Club, such as the Heritage, Burgers & BMWs, but is most notable as a fixture with our Club track crowd (yours truly included). In 2010 she became the Registrar for our High-Performance Driving Events (HPDE), which means she herded (as in "herded cats"), answered dumb questions from, and helped hundreds of wayward adults (like me) in signing up for and safely participating in our Driving Events Programs.

While I have owned BMWs since 2006, I have only been a Club member here in the Puget Sound Region since 2014 and began participating in Club HPDEs in 2017. My wife and I developed a friendship with Dana and Kelcy at the track and, eventually Dana turned registrar over to my wife, Tammy. The following year, I became the membership coordinator, and last year, the vice president. In truth, Dana was a major reason why Tammy

and I got involved with the Club. Good people just draw you in.

To Dana and Kelcy, I believe I speak for the board and countless members, when I say simply that you will be sorely missed. The Club will do our best to carry on without you, but it will not be the same. The Arizona Chapter will be fortunate to have you.

For you, the 1900+ members of the BMW CCA Puget Sound Region, I commit that I will endeavor to serve in this role to the best of my abilities. We, as a board, will continue our work to give you a Club with a broad spectrum of events that appeal to all of members and special interest groups...as well as non-member BMW owners and our fellow Deutsche Marque Car Clubs. We were able to shift gears and execute a lot of events in 2020 that, in March, looked like they were going to be unexecutable. But through innovation and dedication by our board and involved members, we made them happen—safely. Now imagine what we might be able to do this year. Stay tuned.

*mit besten grüßen!*  
Andy Wiest

## We Need Your Skills

WHAT YOU ARE LOOKING AT is the first *Zündfolge* distributed in electronic form only. That is, we are not printing this issue nor the remaining issues this year. This is a step towards our goal of communicating with our membership only electronically. This is much less expensive and quicker than printing and mailing the magazines, the way we did it for the first 50 years of the chapter. By next year, our intention is to dispense with the concept of a 'periodical' and publish straight to the chapter website with emails via ATS drawing your attention to current news and providing a link.

As we transition to web-based communication, we need people to help us with content creation. Specifically, we need help shooting and editing video content.

On November 12, we held our first virtual general meeting. We visited Common Fibers in South Seattle. We had 12 people attend virtually and will have the event posted to our YouTube channel soon.

In time, we hope to build more online video content of interest to members. While the live streaming allows viewers to ask questions in real time, solid video production and post-production work would result in a more polished product.

That's where you come in. If you have experience creating video, we could use your assistance. We need people who can do scripting, shooting, and editing of video. If you have these skills and are a budding film maker, contact Editor David Lightfoot at EditorinChief@bmwpugetsound.com. Thanks.

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# Zündfolge

Quarter 1, 2021

Track Dates Set • Tour Dates Coming • Everything Else???

### ON THE COVER

A BMW Showroom in Berlin in 1929, not long after the first BMW automobiles were introduced.

*Photo by BMW Press*

# The First Ever BMW iX

By David Lightfoot



**BMW seems to be all in on the giant kidneys. We might as well get used to it.**

THAT'S WHAT THE PRESS RELEASE for the introduction of this car is titled: "The First Ever BMW iX." Odd, since the first ever BMW iX was the 325iX, a four-wheel drive E30 3 Series, which was introduced in 1985 in Europe and in 1988 in the U.S. So, this isn't the first iX. And iX and Xi have been suffixes in model names up until now. This is the whole name of this car? I expected an iX5 and an iX3 and on and on, leaving no integer unused.

But that's just the beginning of what, for me, is a new BMW that leaves me very confused.

Where does it reside in the hierarchy of what is sure to be a series of electric SAVs? Why is it being introduced in November 2020, while it is a 2022 model year vehicle? Maybe to provide sufficient time for people like me to become less confused. And to warm up to the looks.

Yes, there is the styling. BMW has taken the giant kidneys from the 4 Series, easily the most controversial styling element since the Bangle butt of the E65 7 Series, and added the peculiar side window treatment of the i3. Don't

get me wrong, I like the quirky side window treatment of the i3; that vehicle needs to look a little odd since it is a real breakthrough type of car. It needs to tell the world, "BMW builds an electric car with a carbon fiber passenger cell and no one else does." Not to mention the fashion statement it makes for the owner of the i3.

But in the case of the iX, the result is, to put it charitably, not pretty. It looks modern ... but is that enough? Some of the X vehicles have been, to my eyes, quite good looking. I like the current X1 and X3 and find most generations of the X5 handsome. This iX is not handsome to me, but maybe it will grow on me.

The iX is based on the CLAR modular, scalable architecture that will be used for almost all future BMWs. This platform uses steel, aluminum and carbon fiber and will accommodate rear or all-wheel drive. CLAR is shorthand for Cluster Architecture, and at this point the jokes almost write themselves. It will enter production in the second half of 2021 at the Dingolfing plant. It will go on sale in the U.S. in early 2022.

The iX is supposed to be a technological tour de force, with the latest BMW ideas in terms of design, connectivity, electrification, digital services and sustainability. To me that says, don't buy one during the first year or two of production, while they are being field-tested on the customers.

## Performance

The iX is slated to have 500 horsepower and a 0 to 62 mph time of 5.0 seconds. Like any pure electric, all the torque is available from the get-go and these things accelerate. Maybe I'm already starting to warm up to this thing. Range is said to be about 300 miles, so comparable to a Tesla.

## Charging

DC fast charging will provide 75 miles of range from a ten-minute charge. Of course, you will never find a DC fast charger. More typical will be the 11-hour charging time, which is a bit more than an i3 on a 240-volt charger. That's the time to take the batteries from fully discharged to fully charged.

## Technology and Climate Concerns

BMW's goal with its i vehicles is to take their cars out of the climate discussion. The proprietary batteries are built using renewable energy and are made without the use of rare earth raw materials. CEO Oliver Zipse puts it this way, "Technology is driving the advances we need to tackle even the greatest challenges. This applies in particular to climate protection. We are in no doubt: mobility has to be sustainable if it is to represent a truly outstanding solution."



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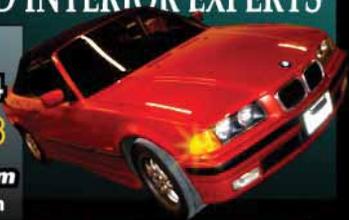
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Head of BMW Design, Adrian van Hooydonk says, “The BMW iX shows how we can give new technologies a very modern and emotional design. The car is technologically complex, but it feels very clear and uncomplicated. The BMW iX offers a mobile living space in which people will feel at ease, where the car’s intelligence is only there when you need it.”

We’ll see. With my i3, I find the car is mostly terrific. The shortcomings are in the user interfaces with the computers on the car. Any time one can use a smart phone rather than a function embedded in the car, the phone is a better choice. That’s not a good sign as these cars become, in essence, rolling smart phones.

### The Package

BMW says the iX has “...the functionality of the X5, the sporting nature of the X6 and with the visual impact of the X7.” We’ll leave it to the reader to decide whether this is a good thing. The traditional BMW kidneys, now in size XXXL, are repurposed from being cooling inlets to being the repository for cameras, radars and sensors, behind a transparent material. There is a cleaning system to keep the ‘view’ clear.

### Project Number i20

The BMW internal code for the iX is i20. The i3 was project i1 and the i8 was coded i12. In the intervening seven years since the i3 and i8 debuted, not much has been happening at BMW i Automobiles, at least in terms of production cars. And if one went back to when the i3 and i8 project teams started work, that was probably about 2008.

### Change of Direction

When the i3 and i8 projects began, BMW’s goal was to create an electric vehicle from a ‘clean sheet of paper.’ The vehicle architecture was specific to an electric car. Contrast this with most other manufacturers who took conventional vehicle architectures and adapted them for electric powertrains. Even Tesla used a conventional, steel unibody with a battery-electric powertrain.

BMW built the car around the battery pack. Further, BMW used carbon fiber to compensate for the weight of the batteries. The carbon fiber was and is sourced from a plant in Moses Lake, WA, to take



**The side view is clearly influenced by the i3. The fenders seem to come from a Chevy Traverse.**



Photos by BMW Press.

**The interior seems to be an update of the i3 with a squared off steering wheel.**

advantage of cheap hydroelectric power. The goal being a truly green car, from end-to-end. Recycled materials are used throughout the interiors of the i3 and i8.

To build the i3 in a mass production environment, BMW had to invent new processes to heat and cure carbon fiber quickly. Remember, most carbon fiber applications were things like race cars and aerospace with limited production runs. The parts spent hours in autoclaves. That would not work for building the i3; after all, over 200,000 i3s have been built in the last seven years.

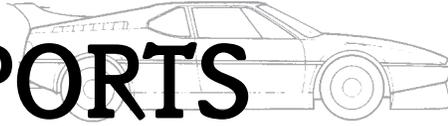
BMW had a good ten-year lead on the rest of the industry. Alas, that lead has been squandered. True, the cost of building the i3 has been extremely high, making the business case for the car difficult.

As mentioned above, BMW’s new vehicle architecture is called CLAR.

The idea is to design cars that can accept gas, diesel, hybrid or fully electric propulsion, depending on market demands. BMW calls this ‘the power of choice.’ Meanwhile, some of the other manufacturers are now adopting electric car-specific vehicle architectures, almost a decade after BMW pioneered their use.

Of course, the iX and all future BMW electrics enter a marketplace jammed with new electric vehicles from virtually every manufacturer except one. That one is Toyota, the biggest car company in the world, probably the most technologically advanced, and a company that produces no electric vehicles. They have made the Prius hybrids for years. They are well advanced in practical hydrogen fuel cell vehicles. But no pure electrics. What do they know that the rest of the world does not?

# MOTOR SPORTS



FIRST OF ALL, thank you all who participated in our driving program for what was a most unusual year. Despite a pandemic, governmental shutdowns, regulations, and possibly a few locusts, we still managed to have five track days. Not only did we have track days, but we also managed to formulate a new way to instruct novice drivers and hold car control clinics. All in all, I would say the year was a success in spite of many obstacles. I want to thank all of the instructors and car control clinic volunteers for making this a successful driving season. What have we learned and what are we going to take from these experiences for 2021? Let me explain.

## Lead Follow

We needed a way to provide in-car instruction for novice drivers without being in the car. This kind of instruction had not been attempted at a BMW driving event that anyone can remember. But difficult times require innovative solutions. I found some UHF radios with cool CIA-style earpieces that easily fit inside helmets so that instructors could communicate with their drivers. Then, we did lead-follow laps around both Pacific Raceways and The Ridge; sometime having the instructor lead and then having the drivers lead. Guess what, it worked. With a few trial and errors, we got it going. I was standing in the start-finish tower and could listen in on all of the communication. It was as if I were in the back seat of an in-person instruction session. We all adapted to this method.

## Lead-Follow Lessons

If you are a student of how people learn, how they respond to instruction/coaching, or the psychology of teaching, then you know all people learn differently. It could be that not having someone in the right seat, with an uncomfortable boom microphone shoved up in their helmet, removes a barrier to learning—being intimidated. I have polled the drivers of D-group (novice group) and of those who responded, they all found the experience

to be rewarding and learned quickly. As a scientist, I am aware that there was not a control group for this grand experiment and there were a low number of data points. However, my confidence level is high that this worked. We incorporated download discussion groups at the end of most sessions to gauge how the group was functioning and to correct some minor issues. One of these issues was getting pairs of cars to pass another. A bit like dancing, only a lot faster.

## Lead-Follow Protocols for 2021

In the absence of a nationwide vaccine being distributed effectively, we anticipate that there will be no in-car instruction well into 2021. Is this a bad thing? No, and in fact the lead follow methodology will be incorporated into the Puget Sound Chapter BMW CCA driving program well into the future. We can use this method for all driver groups on track and in real time. Lead follow protocols will be extended to C group also as a means to provide continual instruction. As you know, moving up in the run groups means experimentation with various lines around the track. The best way to be shown this line is to follow an instructor. We will be experimenting with this method to be sure.

So, you have been reading along and wondering just what in the world am I talking about. There is a way for you to experience all of the above and that is to come out to a Car Control Clinic and then to a High Performance Driver Education day. Why should you come out?

1. *Ask yourself this simple question: do you trust your car and know all about its handling ability?* If the answer is no, then there is a simple solution, come out and experience the driving program. We will show you.
2. *Do you want to become a more focused, precise driver?* If yes, then being guided around the track by an instructor who has thousands of laps

of experience is for you. For those of you who have done some martial arts training, what did it really teach you? It taught you some confidence and coordination. Thus, learning the art of high performance driving does teach confidence and it builds coordination. You will simply be a better driver. You will understand that anyone can go straight and fast, but it takes skill and coordination to turn a corner. There is enormous satisfaction in perfecting a skill.

3. *What are your long-term goals, do you want to go racing, do you want to become an instructor?* We can help. Many drivers will get the racing itch and move into our local programs. One that features the E30 325is body is PRO3. There are others of course, but I think PRO3 is the coolest. For the advanced drivers, have you thought about instructing? If so, contact me and we will talk.

I want to leave you all with a passage from *Speed Secrets* by Ross Bentley. Ross is our local world famous driving coach. When he writes a series of questions about what we all should be asking ourselves, I listen.

## *Speed Secrets #396* by Ross Bentley

I suspect you do something like this already at some point during the year, but I suggest you look at how you can apply this strategy to your driving.

- What went well with your driving in 2020?
- What would you like to improve with your driving in 2021?
- What three words capture your main focus for your driving next year?
- How are you going to measure success—what metrics can you use to keep you on track with your driving goals?
- What are your overarching goals with your driving—and have they changed?

Finally, write everything down in the positive, as in “I’m going to do \_\_\_\_,” rather than “I’m not going to do \_\_\_\_.” And I’d encourage you to not use the pandemic as an “excuse.” It’s the same for everyone, so treat it as a challenge you’ve had to deal with and will need

to continue to deal with for some period of time.

Is learning to drive better any different from everyday life? In the coming months, I will be sending out a series of essays that will focus on the upcoming driving

season, methods for driving, links to videos, and other topics focused on experiencing your Ultimate Driving Machine.

Stay safe, stay health, and Happy New Year.

*Steve Libby, Senior Instructor  
Driving Events Coordinator*

## BMW Team RLL Takes Second

BMW TEAM RLL closed the 2020 IMSA WeatherTech SportsCar Championship with third and fourth place finishes in the GTLM class in the November 14, 2020, Mobil 1 Twelve Hours of Sebring presented by Advance Auto Parts. With the GTLM-class titles decided in the last round at WeatherTech Raceway Laguna Seca, BMW had its focus set on a second-place finish in the manufacturer championship standings as well as second- and third-place finishes in driver points. An equally important goal was to win the Michelin Endurance Cup titles. After twelve tough hours they accomplished all but one of their goals.

John Edwards, Jesse Krohn and Augusto Farfus finished third in the No. 24 MOTUL BMW M8 GTE to secure the team’s tenth podium finish of the season. The trio completed 331 laps of the Sebring International Raceway in the 12-hour contest, finishing one lap behind the winning Porsche. Teammates Connor De Phillippi, Colton Herta and Bruno Spengler finished fourth in the No. 25 MOTUL BMW M8 GTE after leading significant portions of the race.

The story could have very well ended with a victory but following a late-race restart from the race’s ninth caution period, De Phillippi’s No. 25 BMW was rear-ended by a

GTD class competitor while leading and was forced to pit for repairs. The same could be said for the No. 24 BMW, which may have finished higher if not for a brake change that lost the car one lap.

The Michelin Endurance Cup title was decided as the race passed its eighth hour. BMW Team RLL raced in the second and third positions thus securing the 2020 GTLM class IMSA Michelin Endurance Cup (IMEC) for BMW as well as the IMEC driver’s and team titles for John Edwards and Jesse Krohn, and the No 24 BMW team. The four-race Michelin Endurance Cup represents the four endurance races in a season with 52 hours of competition.

The third season of IMSA competition for the BMW M8 GTE has been outstanding with a total of ten podium finishes, including victories at the Rolex 24 At Daytona and the six-hour Tixerack.com Grand Prix at Michelin Raceway Road Atlanta.

The No. 96 Turner Motorsport BMW M6 GT3, co-driven by Robby Foley, Dillon Machavern and Nick Yelloly (substituting for Bill Auberlen), ran as high as fifth in class until a suspected brake issue on lap 235 forced Foley to the garage for repairs and ultimately, retirement.



BMW Team RLL wraps up a successful season at Sebring in November.

# Driving in the Real World

## The Little Things That Give Us Pleasure

Photo by RoClickMag, Adobe Stock Images



HAPPY WINTER! I don't need to tell you that our climate, while it generally lacks the below-zero temps of the Midwest and Northeast (the kind that makes your snout freeze between your house and mailbox), can still be bone-achingly chilly and damp.

And that gets me to the little things in our vehicles that give us pleasure. Sometimes the most unreasonable pleasure in proportion to their significance, I might add. Some of them are related to winter while others are not. Here is a list of indulgences that delight me to no end, and maybe they do for you, too.

### Heated Seats

When I first bought a car with heated seats, which was an early 2000s Audi A4 from a dealer in Seattle, I laughed, thinking that this was something I definitely did not need. After all, I'd miraculously survived nearly thirteen years of frigid Wisconsin and Minnesota winters without ever having them. But when I flicked the driver-side butt warmer on, at first I thought I'd wet myself. Once I realized that my pants were still dry and the days of Depends are still out in the future, I was hooked. This is warmth and comfort, a cocoon behind the wheel that, when combined with a Starbucks latte at hand (think warm milk), is almost like being a baby, only better.

All you need is a swaddling blanket. Until the seat gets hot enough to fry eggs on (something that happens in my E90 335i but won't ever come to pass in my 2016 Subaru Outback).

### Heated Steering Wheels

When I purchased the aforementioned 335i, I didn't even notice the button on the steering column that featured a

mysterious icon with wavy lines. One fall day, I pushed it to see what it would do, and at first nothing happened. Then a delicious warmth crept through my fingertips that pushed through my palms and crept up my arms. As someone who has chronically morgue-cold hands in the winter even with wool gloves, this is something that every car should have. And I was mightily disappointed to discover that my Outback, which is touted as the ultimate off-road, outdoorsy, all-season vehicle, doesn't even offer the option. Forget the Thule ski rack—what were they thinking?

### Properly Damped Storage Compartment Doors

Call me old-school, but there is something absolutely exquisite about a little door—whether it covers a tiny storage compartment or a cigarette lighter (remember when cars actually came with those?)—whose mechanism is damped just perfectly so that when you swing it shut, it closes smoothly, silently and perfectly every time, with nary a hint of misalignment. All is right with the world when this happens. A lot more things in life should be like this.



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### Solid Door Sounds

This is something that European luxury vehicles excel at—a solid, satisfying thunk when you close any door. None of this tinny hollowness that often plagues many low-end or even mid-level American and Japanese brands. My addled mind tends to irrationally equate weighty door heft with added protection (although I'm unsure if there is an actual correlation—it has more to do with the steel bracing placement and engineering). But a mighty satisfaction still floats down when you slam such a door shut and hear it really kerthunk into place, making the vehicle rock ever so slightly from side to side.



Photo by Russian, Adobe Stock Images.

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### Rotary Knobs with Satisfying Clicks

Folks, rotary knobs may be going the way of the dodo and passenger pigeon in the next decade, if Audi is any indication. In 2017, this fellow German automaker announced it was eliminating its round, centrally located, beautifully notched Multi Media Interface button in favor of huge touchscreens, even for audio and navigation. BMW has also been instituting more touchscreens, just like every other luxury vehicle brand. Tesla's behemoth 17-inch touchscreens led the way in this revolution, which has frankly been driven by better integration with Apple CarPlay and Android Auto and the accompanying trend of pinch-and-swipe functions. Still, why replace a good thing that doesn't require a driver to take their eyes off the road?

### External Mirror Defrosters

This is another sublime winter treat, activated when the windshield defroster is turned on in higher-end vehicles. While it's frankly not a whole lot of work to scrape ice off your mirrors, there is something sinfully luxurious about just leaving these little areas of spatial awkwardness to magically melt their frost on their own.



### A (Good) Manual Transmission

Granted, this isn't a little thing but a big one. First, do you know how many new vehicles are actually available with three pedals in the US? According to Car and Driver magazine, a mere 25 cars and trucks are offering this option for 2021, including the BMW 2 Series Coupe and Convertible and the Mini Hardtop, Convertible, and Clubman. But here's the thing: Nothing beats a great manual, one with short, crisp throws and a not-too-belligerent clutch spring, mated to an eager, responsive powertrain. No numb, sloppy ones that mumble and shudder allowed. An awesome manual gearbox is one of the most revered automotive joys, an affirmation of skill and engagement that's worth cultivating. Better get yours while you can; every year, the number of vehicle models equipped with one is dropping faster than the Times Square Ball on New Year's Eve.

### A Trunk Lid That Doesn't Hit You in the Head

Few things in life are more infuriating than to pop open a trunk lid that's so thin, enabled by an equally evil, flimsy hinge mechanism, that it swings up and bounces back down so violently that it rebounds off your innocent noggin. It almost seems to be a requirement for every rental car to have one of these. A well-behaved trunk lid with proper struts is one sure way to tell a vehicle's build quality and intended refinement.

### Courteous Drivers

And, yes, the crowning touch on this list? A polite driver. One who graciously lets you in when you need to merge, waves when you let them in, or waits patiently for you to go first at a stop sign. Treasure them and wave back, always.

*Mi Ae Lipe is a freelance editor and graphic designer in Seattle, Washington, who lives another life as a traffic safety advocate. She blogs on Driving in the Real World, Tweets daily driving news links and tips on Twitter at @DrivingReal, and writes a regular column on street driving for BMW CCA's Roundel magazine. She is the past recipient of the NHTSA Award for Public Service for her work in driver training in Washington state, and she is also a member of the Washington State Transportation Commission's Autonomous Vehicle Work Group's Safety Subcommittee.*

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# PRO3™

## The PRO3 Line

Bill 'Blue Baron' Ecker and Jim 'Croc Man' Cissell

YEAR END—A TIME OF RECKONING. Well, I reckon 2020 was about the worst PRO3 race season ever. ICSCC Conference President Rick Bostom described dealing with COVID-19 as a “machete-hacking slog through dense forests and unexpected quicksand versus the usual well-worn trails.” Before the season started, nine of the 16 races had been cancelled. By June, Conference ruled there would be no championship points. Sponsor AAF’s Hank Moore said his drivers felt if there were no championship, what was the point? The fact that Conference and two clubs were able to put on six races over three weekends—with “masks, social distancing, and no spectators”—without going bankrupt is a miracle, and one that took a lot of hard work. And thanks to that, 2021 looks promising.

Portland hosted the season opener June 19-21. After 100 hours negotiating with the city, parks, county, and state, Cascade President Vince Vavrosky said that approval may have boiled down to his errant mouse click, which forwarded a complaint that “the city didn’t care about them” to a city official. PIR also had to deal with riots, Gary Bockman’s passing, track manager E.C. Mueller’s retirement, and a canceled swap meet that accounted for one-third of annual revenue. But the race had full schools, not one known case of Covid, and with 16 PRO3 cars, some great racing. See Jim’s edited video at <https://youtu.be/OooLXjNfbbM>. Incoming President Steve Powell said he really missed the “closeness in the paddocks.” As did we all.

The second race, Pacific Raceway’s “Summer Classic,” July 17-19, was to have celebrated 60 years of Pacific and 50 years of IRDC. But with no fans allowed, IRDC President Coley Tipton says we’ll have a “do-over” next year to properly celebrate these amazing milestones. Coley, an IRDC member

for over 40 years, wants to re-create the days when races were outings for the whole family. This year’s race had record TNT attendance, 22 PRO3 cars, and some great racing. Easy to say when you win, like Coley did. Video at <https://youtu.be/0KZwTOCIpY8>.

The third weekend, the PIR Dash for Kids, August 15-17, had no track rides or silent auction, though racers still donated generously to the Doernbecher Children’s Hospital. It was over 100 degrees at race time, so racing was hot, with ten PRO3 entries. Video at <https://youtu.be/CyKyTPcRZpI>.

Top five sprint season finishers were Matt Lowell, 130 points; Jeff McAffer, 121; Kevin Doyle, 93; co-author Bill Ecker (with his new engine), 90; and Beef Wellington, 87. Co-author Jim Cissell was eighth, but with no “championship,” who’s counting?

Ten PRO3 cars raced the Historics the 4th of July weekend. We had a blast—except for Jim Butterworth, who totaled his car when he flipped it end-over-end in the first race. Jim came back the next day looking for a new PRO3

car. Sadly, our PRO3 mock races with passengers, which raise funds for Children’s Hospital, were Covid-canceled. Video at <https://youtu.be/-jDiK-69IEg>.

Cascade’s 45th annual October Enduro had 27 entries, nearly doubling 2019, thanks to the new streamlined license procedure. In the eight-hour E1 race, PRO3 sponsor Racer on Rails took second, just seconds behind former PRO3 Champ Chris Hart. PRO3’s Jeff McAffer won the E2 season “Championship,” Matt Lowell took second, and Andrew Michel placed third—all within eight points. Race Chair Chris Heinrich noted that “sponsors Skyline Scaffold, Alternative Cartage Inc, and Retro Racing have supported this race for decades, even though they are all from Canada and couldn’t attend this year.” God bless our sponsors.

“Tracks in smaller cities have to beg, borrow, and steal just to break even,” says Bryce Scott, President of NWMotorsports.org, so when the first-ever joint race with ICSCC and SOVREN was canceled at Spokane, “we didn’t lose as much money.” Re-scheduled for 2021,

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the race will be a “true split event, with every run group racing all weekend long—very entertaining for workers and fans.”

SOVREN President Andy Collins reports they “had a whole season except for Spokane and one joint race with SCCA” and “all events came close to breaking even.” For 2021 he’s working on “a big deal,” an October joint race at Pacific with SCCA, Lucky Dog, and hopefully IRDC. Andy reminds us how much our tracks do for their communities like October’s Trunk or Treat and December’s Toys for Tots fund-raisers at Pacific. For more racing news, sign up for Andy’s Armadillo Racing Weekly Newsletter.

Tracks used the “down time” to make improvements. PIR put new lane striping in the paddock and starting grid. The Ridge has lots of new pavement on the

track and in the paddock, plus that awesome new bridge over the front straight. At Pacific, ProFormance Racing’s Don Kitch reports: they licensed 45 new drivers; are hosting an NHRA national event, one of biggest sporting events in the state; are doing an autometrics program on consumables for Amazon’s 60,000 vehicle fleet; and were recently zoned fully commercial and now have the full blessing of King County for expansion, so they can attract national corporate headquarters. Work proceeds on the industrial park (with nearly 150,000 square feet leased and tenants expected to move in by mid-summer), driver garages, and a museum—possibly featuring Dale Earnhardt’s car that he raced at Pacific in 1984.

Hey, we survived a pandemic, a testimony to how much we racers, officers, and workers love our sport and what we are willing to do to keep it alive. Come join us. Tentative 2021 Schedule: PIR 4/30-5/2, Pacific 5/14-16, Spokane 6/4-6, PIR 6/18-20, Historics 7/2-4, PIR 8/13-15, Pacific 7/16-18, Ridge 8/27-29, Enduro 10/16. PIR also hosts the Rose Cup 7/9-11, SVRA Trans Am 7/23-25, and Indy Car 9/10-12.

Our PRO3 documentary has six days of shooting in the can, and Producer Dave Krygier is slogging through 150 hours of video. But we still need two races next year to finish. See the latest promo/trailer at <https://vimeo.com/486663675>.

Now, with all those dollars I saved from the shortened season, I’m gonna do me some upgrades—a better mask, to start.



**Andrew Michel’s car (co-driven by Josh Voigt, Matt Lowell and Scott Eckert) roars down the straight with no one but Mount Hood behind.**



**October 17, 2020, the classic LeMans start at PIR’s 2, 4 and 8 hour Enduro. Note all crew in Covid masks.**



**Scott Studerus leads Andrew Michel and Pete Bristow’s Spec E46 into turn 12. Scott drove solo and finished fourth in class in the 2- and 4-hour.**



**Andrew Michel tries to fend off Racer on Rails’ Spec E46 as evening falls.**

Photos by Doug Berger.



# Free 2021 PRO3 Calendars



THE BMW PRO3 GROUP is again providing free PRO3 wall calendars locally to Puget Sound Region Club members, a \$12 value to the rest of the country. To get your free copy, visit one of the following listed businesses that have agreed to serve as calendar distribution points. Use your favorite search engine to get their business addresses. Distribution is under way.

Enjoy twelve colorful months of BMW PRO3 action racing at tracks around the Pacific Northwest.

Additional support was provided by the Puget Sound BMW Club, BMW Northwest, 425 Motorsports, AAF Racing, Northwest Differential, Lovitt Motors, and Racer on Rails.

This high quality calendar features PRO3 images shot through the lens of local photographers and designed by Club member Matt Ferbache.

Calendars are available for sale for \$12 each. Visit [www.PRO3-Racing.com](http://www.PRO3-Racing.com) for ordering details.

*Daniele Hovington, PRO3 #91  
danielehovington@gmail.com*

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# Oil Analysis as Preventive Maintenance

By Andy Wiest

MANY BMW OWNERS, especially owners of older or high-mileage BMWs, are fairly fanatical about preventive maintenance. If they read *Roundel*, they probably use Mike Miller's lifetime maintenance schedule (which is certainly worth considering). They preemptively replace things that they know will fail at regular intervals (water pumps every 75k, anyone?). But one area that many may not consider is oil analysis, or truthfully "car fluid" analysis, as the companies that provide this service will typically analyze any oil you send them—transmission fluid, brake fluid, differential oil, etc. While oil analysis has been common in racing and industrial circles for many years, it really isn't mainstream ... but maybe it should be. This article is about

why I came to be an oil analysis believer and how a current situation with my track car is proving its value.

First, some background on engine oil and replacement schedules. You may have noticed that BMW's oil intervals have been going up for years. Now, with condition-based maintenance and synthetic oil, our cars will tell us 10-15K intervals are just fine, versus the 3-5K intervals of the past. While there is some trust we can put in the manufacturer for these recommendations, there is also valid skepticism. After all, it can be assumed that lawyers and bean-counters got a vote on the decision to allow 15K oil change intervals, not just engineers. In fact, I've read some articles that indicate one of the factors driving

up the intervals is so car manufacturers can limit lifetime oil use and disposal to generate more "green" numbers for marketing. I'm sure car manufacturers would never allow marketing to influence engineering (insert sarcasm emoticon here). Suffice it to say, multiple factors have enabled oil intervals to go up, and honestly, most are not for marketing or virtue-signaling reasons. Oil quality has definitely gone up dramatically.

The design and construction quality of our ultimate driving machines have gone up, and the ability of computers to estimate how used our oil is has become pretty good. But, as with all algorithms, there are limitations because there are too many variables, and not all are directly measured. For example, What

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	1,000	UNIT / LOCATION AVERAGES	4,000	6,000	6,000	5,500	4,500	UNIVERSAL AVERAGES
	MI/HR on Unit	107,000		106,000	102,000	96,000	90,000	84,500	
	Sample Date	9/27/2020		8/13/2020	1/21/2020	5/31/2019	9/21/2018	3/17/2018	
	Make Up Oil Added	0 qts		1 qt	2.5 qts	1 qt	3 qts	0 qts	
ALUMINUM	3	6	5	7	8	7	7	8	
CHROMIUM	1	1	2	3	2	1	1	1	
IRON	16	34	38	62	61	38	22	30	
COPPER	1	2	3	3	3	2	2	4	
LEAD	32	24	110	27	0	0	0	1	
TIN	0	1	0	0	2	1	0	1	
MOLYBDENUM	1	48	1	4	9	36	221	72	
NICKEL	1	1	1	1	1	0	0	0	
MANGANESE	1	1	1	1	1	1	1	3	
SILVER	0	0	0	0	0	0	0	0	
TITANIUM	1	1	1	1	1	1	1	5	
POTASSIUM	0	5	7	6	7	5	5	3	
BORON	3	64	4	5	14	51	304	59	
SILICON	4	4	4	3	3	3	5	5	
SODIUM	4	5	5	4	5	6	6	7	
CALCIUM	2985	2108	1970	1829	1786	1887	1953	2342	
MAGNESIUM	11	10	8	9	11	7	10	123	
PHOSPHORUS	977	772	718	693	641	748	807	786	
ZINC	1079	869	870	812	735	810	853	914	
BARIUM	0	0	0	0	0	0	0	0	

Values Should Be\*

PROPERTIES	SUS Viscosity @ 210°F	66.4	65-78	64.3	65.8	64.8	64.4	65.9
	cSt Viscosity @ 100°C	11.99	11.6-15.3	11.42	11.82	11.56	11.45	11.85
	Flashpoint in °F	320	>385	380	375	425	395	430
	Fuel %	3.3	<2.0	TR	0.5	<0.5	<0.5	<0.5
	Antifreeze %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Water %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Insolubles %	0.1	<0.6	0.4	0.2	0.3	0.3	0.3
	TBN							
	TAN							
	ISO Code							

Figure 1: Blackstone Labs analysis of EINS engine oil over almost a three-year period.



latitude do you live in (i.e. how cold or hot does it get routinely)? Do you garage your car? Do you warm up your car every day before driving? Do you drive your car gently or aggressively? The list goes on.

The truth is, if you drive your car hard—as many of us do—your car may use oil faster and harder than the computer can accurately measure. Now, you can just trust the car’s onboard computers, but given the amount of money you’ve invested in your car, why wouldn’t you err on the conservative side to ensure that you won’t need major work right after the warranty runs out? One option is to trust Mike’s schedule, as mentioned above; many do. But you can also get some real data that can help you decide the oil interval for your car based on the way you drive it, whether that be on the street or the track. It’s called oil analysis. It’s not very expensive, and multiple companies provide it.

I started getting oil analysis done on all my vehicles a couple of years ago after I got into high performance driving with the Club. To me, it seemed like relatively cheap insurance for my track car and my daily drivers, especially since I do almost all the maintenance myself. I happen to use a fairly popular company called Blackstone Labs, but all of the companies provide similar services. Blackstone offers a bunch of different tests, but their standard oil test is \$30.

The process is fairly simple, especially if you change your own oil, but your preferred service center should be able to take the sample for you, if you ask. Because I regularly sample all my cars (you don’t have to sample every oil change, BTW) I get the “six-pack” of sample kits from Blackstone about every 18-24 months. Each kit contains a postage pre-paid container, with a small sample bottle, an oil absorbent towel, a sample data form, and a ziploc bag that it all fits inside. When you take the sample, one of the rules is that you never take the first or last bit of oil that comes out of the drain (assuming you are doing it in conjunction with an oil

change). I typically let the oil drain for about five seconds, then put the sample bottle in the stream. Make sure the oil isn’t too hot before doing this. Then I put the cap on the sample bottle, wrap it in the oil absorbent towel, put that in the ziploc bag, and then put the bag in the shipping container. Then you just drop it in the mail. In about a week you will get an email with your results, which includes a helpful paragraph from a Blackstone analyst interpreting your results. A portion of my last report for EINS is in Figure 1. And that leads to the second part of this story, and why I am a true believer in oil analysis.

So here is my real-world example of oil analysis value: in Figure 1 you can see a history of oil changes for EINS. There are a lot of things that are analyzed, and I won’t pretend to be an expert on all of them, but the analyst comments will help you sort that all out. You can also email or call them if you have questions. Some things are obvious, like viscosity (is your oil still lubricating in spec?), flashpoint (do you have fuel leaking, which in my case was likely because I did an engine flush treatment coincident with this sample), and anti-freeze (head gasket replacement in your future?). The others you can take the time to learn about if you desire.\*

Lead, for example, is very common in bearings, especially rod bearings—rod bearings that if they spin typically mean buying a new engine. Yikes. Looking at Figure 1, you can see that, at the 102K sample, my lead content started going up. The analyst asked if I used race gas, and I had, from time to time, but it was labeled as unleaded at the track. But that could have been the source, and the lead levels were low, and, most importantly, there was no copper in the sample (copper is the next layer in a typical rod bearing), so I decided to see what lead levels were at the next sample at 106K. During this period, I participated in about seven track days and had used race gas again several times, and the 106K sample indicated lead level was definitely going up (but fortunately still no copper). So, I decided to get a

sample 1,000 miles later at the end of the track season. Unfortunately, lead was again present. Cue sad trombone. This time I had purposefully avoided race gas so that was eliminated as a factor. So now, I intend to take a second 1000-mile sample at 108K to give a highly comparable sample from 107K to 108K. If I still have lead in the sample, I will likely replace the rod bearings, even if there is no copper. I can’t be sure the rod bearings are the source (something certainly is), but the car has over 100K miles and I’ve done a lot of track days in the last four years, so it’s a logical decision. A rod bearing replacement isn’t cheap ... but it’s certainly cheaper than a new engine. And I would have never known about this potential issue without oil analysis.

Ultimately, oil analysis helps car enthusiasts like us make smart maintenance and repair decisions for their vehicles, which can ultimately save a lot of money in repair costs. However, if you are a person who only leases your vehicle, or you always trade your car in after the warranty runs out, it may not be worth your time, money or effort. But for those of us who keep our BMWs into the hundreds of thousands of miles, I believe it can be an invaluable tool in detecting small issues before they become large, and costly. As always YMMV\*\*!

\* *For those who noted the Molybdenum and Boron “decaying away” from the 84.5K sample to the 106K sample and were wondering what that was, that’s what a ceramic engine oil supplement (Liqui-Moly Ceratec) add at 84.5K looks like.*

\*\* *Your Mileage May Vary.*

# Fifty Years of Electric BMWs



BMW HAS BEEN BUILDING ELECTRIC CARS, in limited numbers, since 1972. The production of full electrics is about to ramp up in a big way. Let's look at the history.

## BMW 1602 Electric (1972)

Starting in 1969, BMW constructed two experimental vehicles on the basis of the BMW 02 Series with the aim of investigating the suitability of an electric drive unit for practical driving. The place of the manual gearbox was taken by a DC shunt-wound motor with a peak output of 32 kW that had been developed by Bosch and whose power was directed to the rear wheels via the intermediate gearing and prop shaft. A thermostat-controlled 140W radial fan took care of cooling. The 85-kilogram electric motor drew its power from 12 standard 12V

lead-acid batteries from Varta, which were positioned on a pallet in the engine bay. The battery pack weighed in at a hefty 350 kilograms, although it could be removed as a single unit and replaced with a freshly charged pack. The BMW 1602 Electric was seen as just a first attempt at development rather than a viable solution.

## BMW 325iX (1987–1990)

The “Electric car with high-energy battery” research project first launched in 1981 eventually led to eight BMW 325iX models being converted from all-wheel to front-wheel drive in 1987. They served as experimental vehicles for trialing a brand-new, maintenance-free sodium-sulphur (NaS) battery, which had been purpose-developed by Asea Brown Boveri (ABB) for use in an

electric vehicle. With an energy density three times greater than that of conventional lead-acid batteries it represented a great leap forward. For the first time there was a realistic prospect of mitigating the specific disadvantages of electric drive systems, such as battery weight and the space required. Beyond this, all of the electric drive components were to be tested and further improved. BMW constructed a special test rig for this purpose with a built-in output calculator.

## BMW E1 and E2 (1991–1993)

Encouraged by the positive results with the new NaS battery, BMW Technik GmbH was commissioned to develop an electric vehicle from scratch, with the objective of investigating the electric drive's advantages and disadvantages in



1602 Electric (1972)



E1 Electric (1991–1993)



E30 Electric (1987–1990)



E36 Electric (1992–1997)

Photos by BMW Press.



**MINI E  
(2008)**



**ActiveE  
(2010)**

practical operation. The target specifications included performance suitable for everyday motoring, a reasonable driving range, enough room for four adults plus luggage, and high standards of safety, all while keeping weight to a minimum. After just ten months in development, the result had its public premiere at the 1991 Frankfurt Motor Show as the BMW E1, a city-mobile with a compact exterior and a versatile interior. Even now, 20 years on, many of its technical features still have a sophisticated ring to them.

A second, more advanced version of the BMW E1 was presented at the 1993 Frankfurt Motor Show. It was equipped with a new means of energy storage based on sodium-nickel chloride (NaNiCl<sub>2</sub>). The “ZEBRA” battery, as it was known, was another significant leap forward, as it helped to improve not just service life, but driving range and performance, too. The drive system in the BMW E1 was furthermore designed so efficiently that the energy generated during vehicle deceleration was automatically fed back into the battery. One year prior to this, BMW had already taken the wraps off the E2 at the Los Angeles Auto Show. Derived from the first-generation BMW E1, this study’s

dimensions and power output had been specially adapted to the US market.

**BMW 325/BMW Electric (1992–1997)**

Starting in the early 1990s, the third generation of the BMW 3 Series provided the basis for some 25 experimental vehicles, which were used for testing and honing new components in order to gradually bring electric drive technology up to production standard. The first generation of these prototype vehicles included eight models that took part in the world’s largest public field trial staged on the German island of Rügen. A further six test vehicles were incorporated into the fleet of the Bavarian State Government. Following problems related to the sodium-sulphur batteries, in 1993 the energy storage devices were switched to the sodium-nickel chloride batteries already familiar from the BMW E1. One BMW 325 model from the Rügen fleet was fitted with a nickel-cadmium (NiCd) battery. Over the course of development, electric motors with outputs of up to 45 kW were used, which now weighed just 65 kilograms including transmission. Notable progress was also made with regard to the energy storage technology, with quick charging

now enabling the batteries to attain 75 per cent of capacity in just 40 minutes. Finally, the engineers also succeeded in recuperating as much as 20 per cent of the electrical energy during driving.

**MINI E (2008)**

When the BMW Group first presented the MINI E in 2008, it brought out a fleet of over 600 purely electrically powered cars designed for private, everyday use. A broad-based pilot project was launched which saw the electric car being supplied to selected private and corporate customers, first in the USA and then in Europe. The evolution of lithium-ion batteries for automotive applications reached a whole new level in the MINI E, with power capabilities, storage capacity and dimensions all making impressive readings. For the first time, customers were provided with a special charging station known as a wall box, which allowed the energy storage devices to be fully recharged in the space of two-and-a-half hours. The performance, range and everyday practicality of the MINI E helped to further boost interest in electric drive concepts and acceptance of them.

*Continued on page 18*

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**i3 (since 2013)**



**i8 (2014-2019)**



**BMW ActiveE (2010)**

In early 2010, just a year or so after the debut of the MINI E, the BMW Group took another big step towards a zero-emission production vehicle with the world premiere of the BMW Concept ActiveE. The BMW ActiveE was built on the basis of the BMW 1 Series Coupé and allowed BMW to test versions of the drive components and energy storage devices for the future Megacity Vehicle (which became the i3). To this end, a test fleet of over 1,000 models was dispatched into service in 2011.

**BMW i3 (since 2013)**

The BMW i3 was unveiled in 2013. Offered in both pure electric and range-extender models, the i3 makes extensive use of carbon fiber. Though it was a groundbreaking car, the \$50,000 plus purchase price and limited range hindered widespread adoption. Still, over 200,000 have been sold.

**BMW i8 (2014-2019)**

Introduced with the i3, the i8 was a hybrid gas/electric supercar. With a price in excess of \$140,000, it was a limited production car and probably way ahead of its time.

**Next Models (2021 and beyond)**

BMW's stated intention is to offer the power of choice in its powertrains, with most new cars offering a choice of gas, diesel (in Europe), hybrid and full-electric. This is an 180 degree change from the i3/i8 approach, where both cars were engineered specifically as electric cars from the ground up. The market will decide if BMW's new strategy is the right one. The all-new iX, a fully electric SAV, is the first of this new generation of BMWs. It is expected to be available in 2022.

*BMW Group Corporate Communications*

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## Mini Vision Urbanaut

BMW GROUP INCLUDES the Mini brand, and Mini has shown a concept all-electric car emphasizing “Clever Use of Space,” according to the official press release. Mini has always been famous for its clever use of space, but I don’t think Alex Issigonis, the car’s original designer, ever envisioned something like this. Issigonis was designing, well, a vehicle.

The Urbanaut is meant to be “an enabler of and companion for unforgettable times—Mini moments.” These three curated Mini moments are “Chill,” Wanderlust” and “Vibe.” For “Chill,” the car is a haven to retreat to in the city. “Vibe” is, evidently, a stationary and very small party place. “Wanderlust” is the only one of the three Mini moments where the car is actually being driven. This multi-purpose space is enclosed in a fully electric Mini with automated driving functions.



Urbanaut shows its appeal to the wealthy street people demographic.



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## Concept FLOT

FOR NOW, IT IS JUST A VISION: A vehicle glides smoothly over the ground, untethered from any infrastructure and powered by bioenergy obtained from algae. Yet this vision has already won awards: The “FLOT” team from the elite Tsinghua University in China persuaded the critical judges with their pitch, winning the #NEXTGen Moving Tomorrow contest in an exciting final. And rightly so: The flying car impresses with its strong focus on sustainability, state-of-the-art technology and innovative design. The concept does not only exceed the judges’ expectations for sustainable premium mobility, but also fully embodies the BMW Group’s pioneering spirit.

The idea from the winning team from Beijing is as simple as it is ground-breaking: Air cushion technology allows the cockpit to glide smoothly over the ground—no longer requiring any transport infrastructure at all. The vehicle is powered by bioenergy obtained from algae and can adapt flexibly to conditions in future megacities. Cars can be linked one behind the other to transport several people at once or, if needed, even rotated to go in a vertical direction—driving along the planted exterior walls of gigantic skyscrapers and thereby avoiding traffic or having to change modes of transport. In addition to receiving a financial award of 15,000 euros, the “FLOT” team will also have the opportunity to discuss their vision at an international level with the Board of Management of the BMW Group.

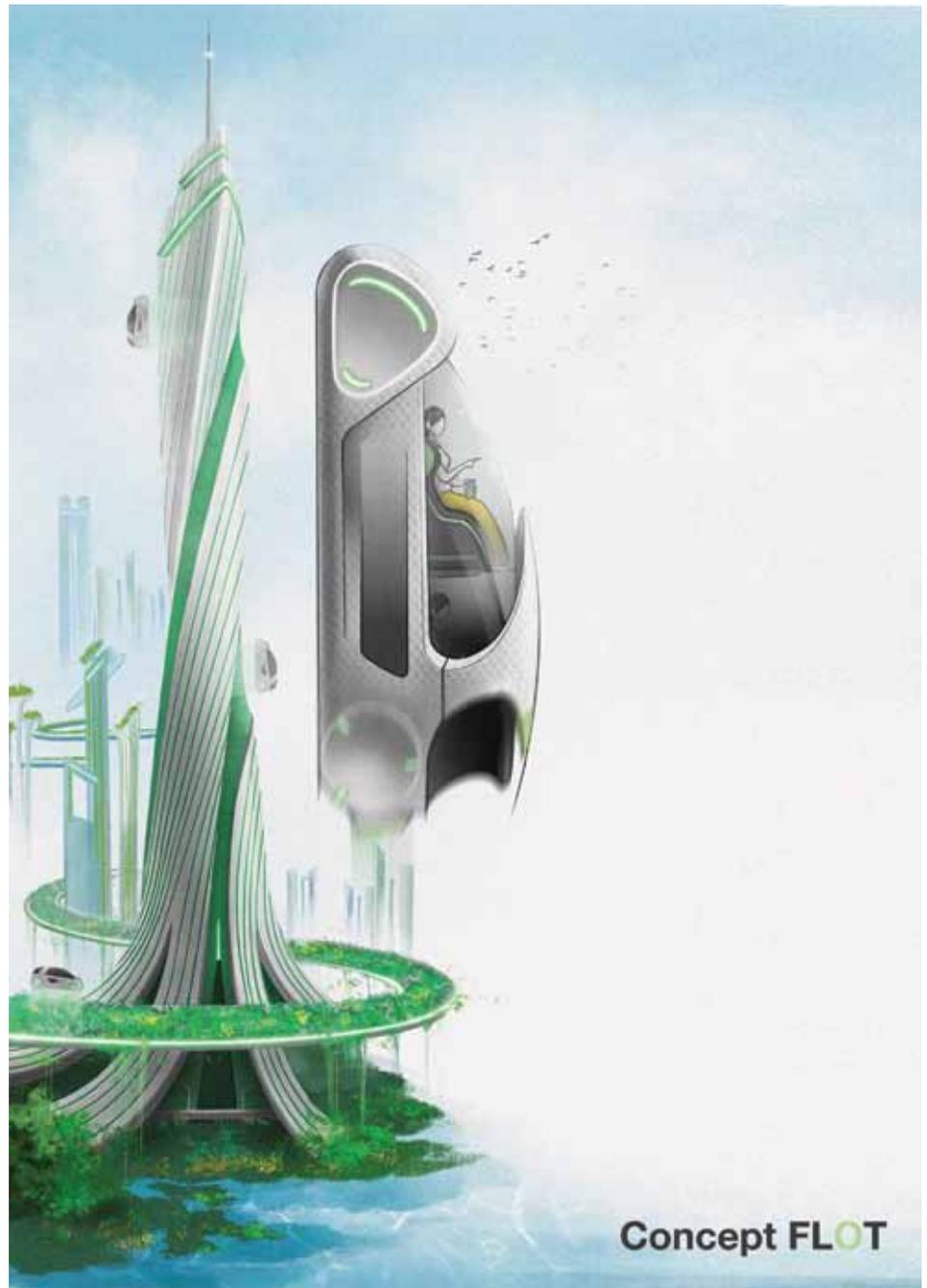
To spark joy—that was the goal. (*Was Marie Kondo consulted about this?—Editor*) “The #NEXTGen Moving Tomorrow Pitch encouraged the next generation of scholars to combine their technological know-how with their vision of sustainable premium mobility in 2040,” said a delighted Ilka Horstmeier, member of the Board of Management of BMW AG responsible for Human Resources, at the award ceremony. She is enthusiastic about solutions like “FLOT’s” that are compelling not only because of their originality, but because they also take a holistic approach that

factors in sustainability, luxurious design and the needs of the next generation.

The judges were also impressed by the two other finalists: a second team from Tsinghua University and a team from a total of six Fraunhofer-Institutes. “It wasn’t just the ideas they presented that impressed us, but also

the way in which they were developed. We have seen outstanding examples of cooperation between interdisciplinary teams—in some cases, even across borders,” Horstmeier summed up. “We believe this is precisely what will drive innovation in the future.”

*BMW AG Press*



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