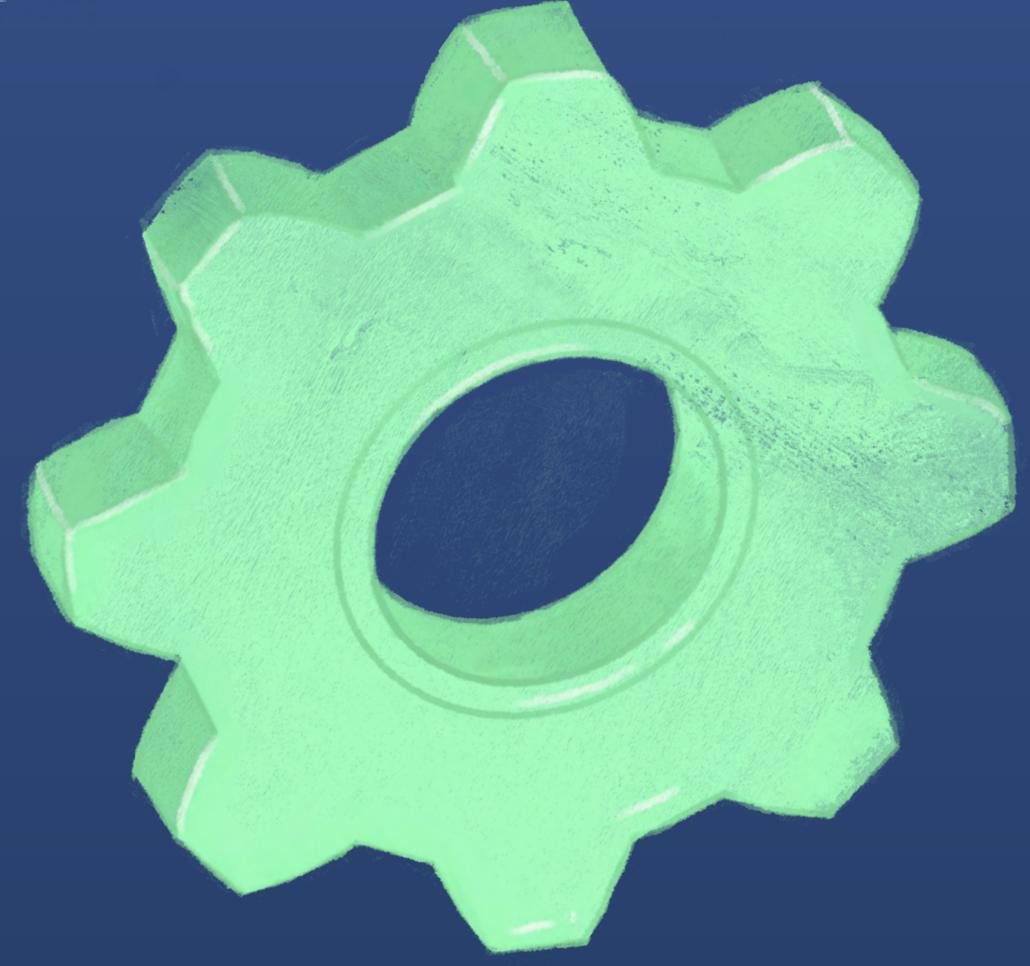
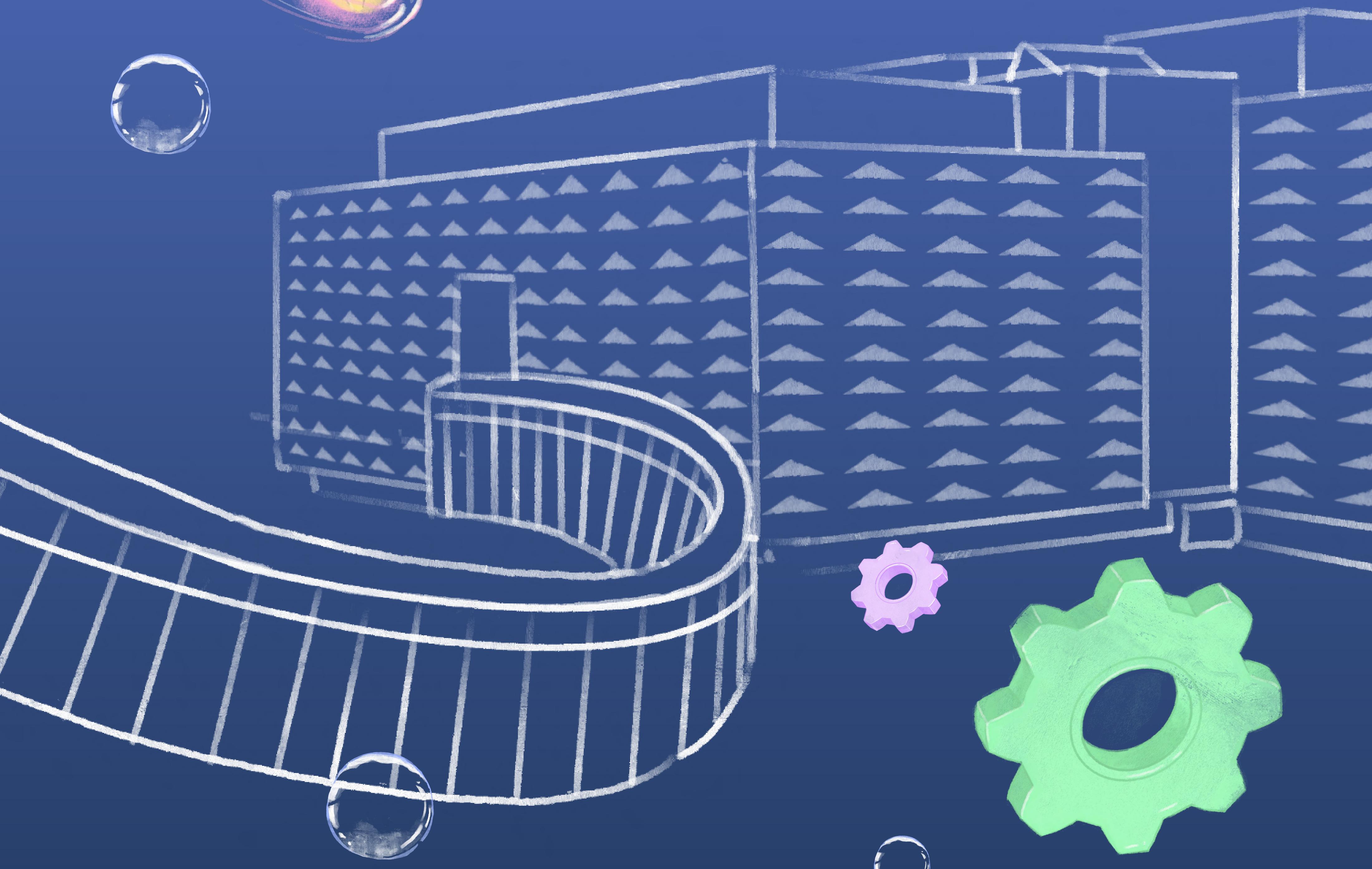
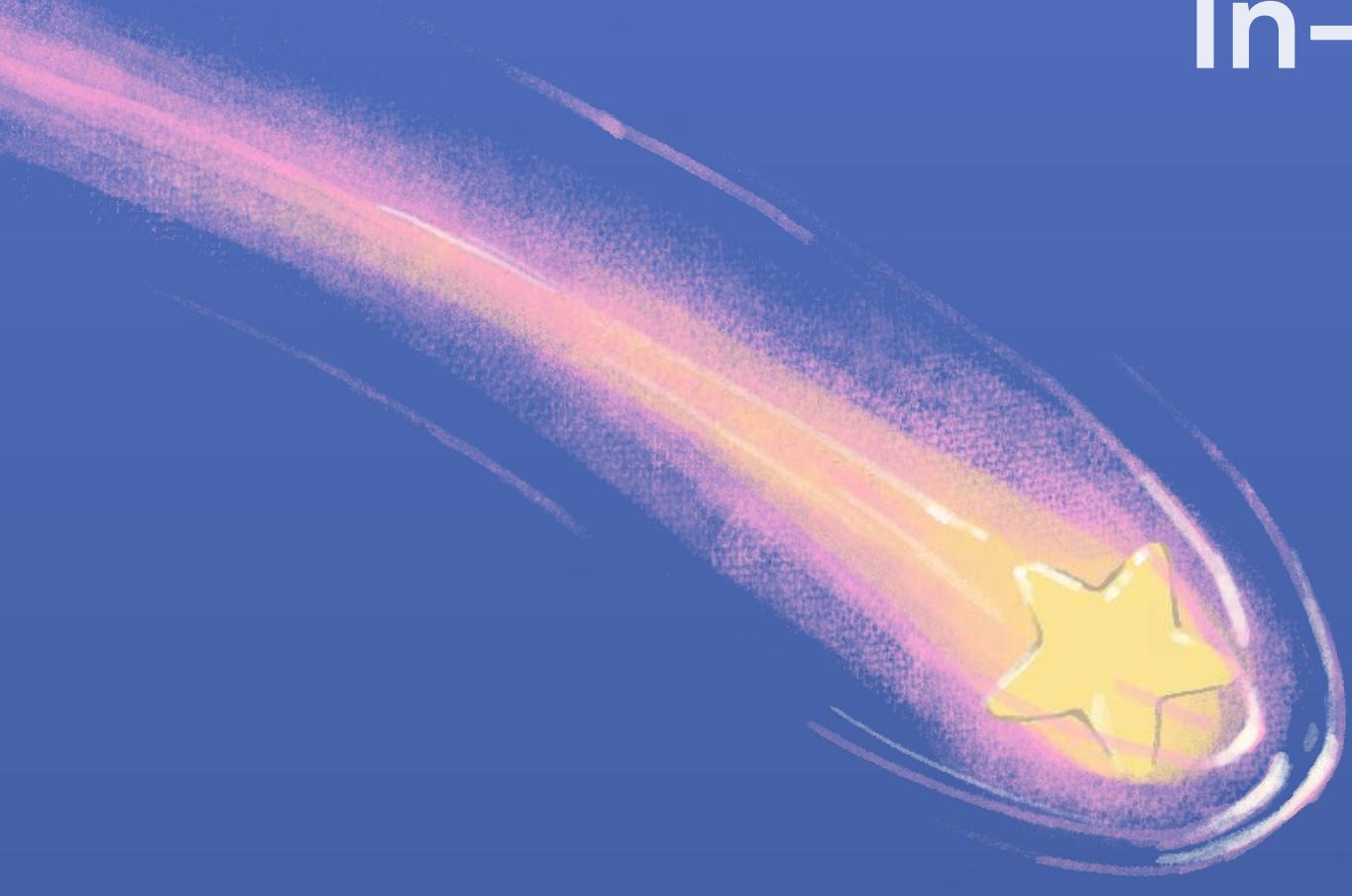
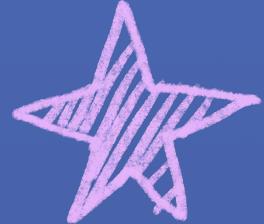


★ WELCOME TO

# Hack the North

September 13-15th, 2024

In-person event @ Waterloo, ON





**Presented by:**



Techyon is a nonprofit dedicated to empowering the next generation of tech leaders.

Techyon's vision is to foster an inclusive tech culture and community, with the mission to lower the barrier of entry to technology by bridging the gap between individuals and opportunities. Our goal is to have year-round representation of every specialization within technology. Whether your interests lie in hardware, software, design, product management, or data science, we want you to think of Techyon first. Feel free to reach out to [hello@techyon.org](mailto:hello@techyon.org) to learn more!

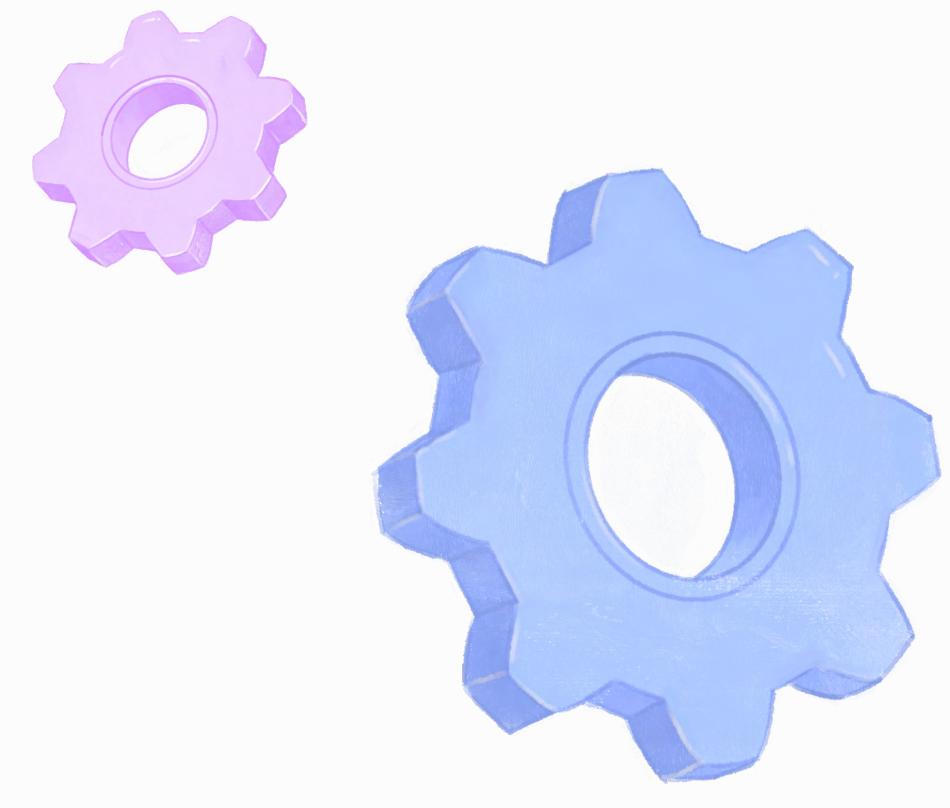
## **WATERLOO | ENGINEERING**

Our partner of over 10 years, Waterloo Engineering continues to support Hack the North to build a creative, diverse, and unique experience for hackers. The University of Waterloo is home to Canada's largest engineering school — a pipeline for engineering talent for the world's leading companies. Ranked among the top 50 engineering schools in the world, the school's reputation for excellence is built on the foundation of co-op education and a bold history of innovation.

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# Welcome to Hack the North 2024!



Get ready for an unforgettable weekend of innovation, collaboration, and excitement! Whether you've travelled from afar, or just walked down the street, Hack the North has something special for everyone!

This booklet is your **go-to guide** for all things Hack the North—you'll find details on where to grab delicious food and refreshments, a comprehensive list of workshops and meetups, and key contact information.

This year, we have an amazing lineup of activities for you, including bubble soccer, karaoke, and our always-popular silent disco! Be sure to head to the RBC Oasis Tent for some mouth-watering treats, including comfort classics like smash burgers and our signature late-night poutine—a Canadian classic!

If you're still looking for teammates, be sure to attend the **Team Formation Workshop on Friday from 11:00 PM to 12:00 AM** in the **Activities Room** on the first floor.

We wish every hacker the best of luck this weekend! Thank you for being here and helping to make this event extraordinary—don't forget to dream big! If you need any assistance, our friendly organizers in black zip up sweaters are always here to help ❤️

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Don't forget to stay up to date this weekend through these channels:

-  [hackthenorth.com](http://hackthenorth.com)
-  [hackthenorth.slack.com](https://hackthenorth.slack.com)
-  [my.hackthenorth.com](http://my.hackthenorth.com)

-     
- @hackthenorth

# Gold Sponsors



Hey Hackers!

What does it take to be Canada's largest bank and support 17 million clients globally? Reimagined financial services, and a future-focused team. That's why RBC is one of Canada's largest tech employers, with over 10,000 technologists who are fuelling new ideas and driving massive transformations.

With job opportunities ranging from Cybersecurity to AI and Machine Learning, digital app development, and more—we apply imagination, insight, and cutting-edge technology to everything we do. As students, you are an integral part of the future of tech, and we provide the tools, support, and flexibility to transform into one of the leaders of tomorrow.

If you're interested in exploring how you can engage in tangible projects with meaningful impact, visit us this weekend. We've got plenty of exciting opportunities for you to see what RBC has to offer!

Whether you want to connect with experienced technologists, learn about upcoming opportunities from recruiters, or book a coffee chat, our team is happy to connect you to the right opportunities for you. But that's not all! Stop by for some amazing swag, snacks, and our iconic AirPod Max giveaway.

Want to put your skills to the test? You can participate in our Avion Rewards API Challenge and workshop! The winning team for the challenge will receive \$300 per team member.

See you soon!

Tech @ RBC



Cohere is the leading AI platform for enterprise. Our world-class AI is uniquely suited to the needs of business, unlocking unprecedented ease-of-use, accessibility, and data privacy. Cohere's platform is cloud-agnostic, accessible through API as a managed service, and can be deployed on virtual private cloud (VPC) or even on-site to meet companies where their data is, offering the highest levels of flexibility and control.

Founded by Google Brain alumni and a co-author of the seminal Transformer research paper, Cohere is on a mission to transform enterprises and their products with AI that unlocks a more intuitive way to generate, search, and summarize information than ever before. We are backed by group of global institutional and strategic investors including Index Ventures, Oracle, NVIDIA, Salesforce Ventures, Inovia Capital, DTCP, Mirae Asset, Radical Ventures, Section 32, and Tiger Global, as well as several AI luminaries, including Geoffrey Hinton, Jeff Dean, Fei-Fei Li, Pieter Abbeel, and Raquel Urtasun.



Life-defining work for you—and entrepreneurs.

Opportunity is not evenly distributed. Shopify puts independence within reach for anyone with a dream to start a business. We propel entrepreneurs and enterprises to scale the heights of their potential.

Since 2006, we've grown to 10,000 employees and generated over \$1 trillion in sales for millions of merchants in 175 countries. The ripple effect of this is far-reaching.

Over the years, we've found that commerce can be a force for good, that entrepreneurs drive communities forward, and that small businesses are the backbone of economies. More than that, independent businesses enable incredible change. You vote with your dollars for the things—and changes—you want to see more of in the world.

This is life-defining work that directly impacts people's lives as much as it transforms your own. This is putting the power of the few in the hands of the many, is a future with more voices rather than fewer, and is creating more choices instead of an elite option.

We're arming the rebels. Who wouldn't want to be part of that?



Be a part of the future of the creator economy and join us on our journey as we shape the tools that are revolutionizing the way creators and their audiences connect and engage. Since our launch 1.5 years ago, our mission at Passes has been to help creators become entrepreneurs by equipping them with tools that allow them to own different revenue streams. And we're just getting started.

We've built out the strongest software in the space, with subscriptions, DMs, livestreaming, one-on-one calls, e-commerce, and more, helping change the lives of many, who have paid off loans, bought houses, and quit their 9 to 5 jobs.

Come to our booth to meet the team to learn more about our vision and how you could be a part of it, and join the fireside chat with our founder and CEO Lucy Guo to hear more about the opportunities in front of us.

# Important Information

## Emergency contacts

University of Waterloo Police:	519-888-4911 Ext. 22222
Hack the North:	<a href="mailto:hello@hackthenorth.com">hello@hackthenorth.com</a>
Good2Talk (Mental Health Helpline):	866-925-5454
Campus Response Team:	226-339-0462
Hack the North Chatbot:	Found in #questions on Slack

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## Internet connection

Network name: Hack the North

Password: HTNX2024

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## Slack and Communication

Join the Hack the North Slack to connect with other hackers, organizers, and sponsors. Slack will be the primary method of communication throughout the weekend, and will be used to relay important announcements, contests, and challenges.

### Slack: [hackthenorth.slack.com](https://hackthenorth.slack.com)

An invite to Hack the North's event Slack was sent to your email before the event. If you have issues accessing our event Slack, please come to the Help Desk!

### Attendee Dashboard: [my.hackthenorth.com](https://my.hackthenorth.com)

Head over to the link above to access our live **Attendee Dashboard!** Here, you'll find the event schedule and the essential tools needed to help you navigate throughout the event including hardware and mentorship tools. The dashboard also features a **networking tool** where you can create a profile to set up a personal bio and list your interests. This allows you to connect with other hackers and sponsors by viewing their profiles, creating long-lasting connections that go beyond the event!

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## QR codes and security

- Your badge must be worn at all times throughout the weekend for security purposes.
- Do not lose your badge. If something goes wrong or you misplace it, please visit the help desk for assistance.
- You must have the QR code on your badge scanned to redeem food, attend activities and workshops.

## Help and Resources

### Help Desk

The help desk is located by the E7 entrance, and will be staffed by organizers that are ready to address any questions and concerns you may have throughout the weekend.

### Hack the North Organizers

Need any help throughout the duration of the event? Look for someone wearing this jacket or pink t-shirt! They are Hack the North organizers and will be happy to assist you. Whether you have questions about the schedule, need directions, or require any other support, our organizers are here to make sure you have an amazing experience 😊 Don't hesitate to reach out to them for anything you need!



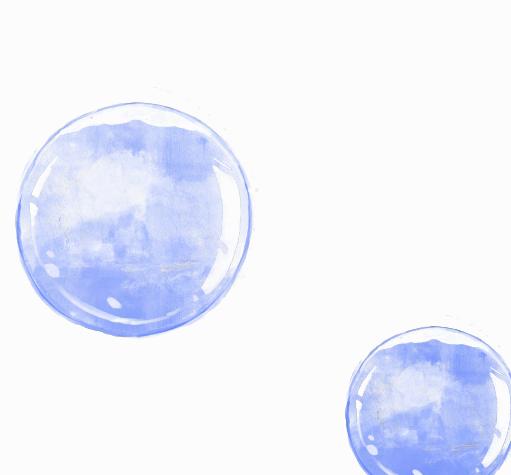
### Volunteers



Volunteers will also be present throughout the event to give directions, serve food, run activity check-ins, and more! If you have any questions or just want to chat, find them wearing a charcoal Hack the North shirt.

### Additional Help

For any additional questions or extra help, head over to [my.hackthenorth.com!](http://my.hackthenorth.com) There, you can find tons of information and resources regarding this year's event. Need help during the event? Our chatbot is here for you! You can find it in the #questions channel or send it a DM anytime. Don't hesitate to reach out for quick answers and support!



## Accessibility

At Hack the North, we prioritize accessibility and accommodations. For more details on our policies and how we can support you, visit our Accommodations Policy [here](#).

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## Meals and Refreshments

We encourage you to use either refillable water bottles or water fountains. Water fountains can be found by the elevators on each floor in both E7 and E5.

Meals and select snack service times can be found in the event schedule. All dining services will be held and served in the RBC Oasis Tent.

Snacks and refreshments are available at three locations:

- The Outdoor Workspace next to the RBC Oasis Tent.
- The snack station across from the E7 first-floor elevator.
- Distributed by volunteers with wagons on each floor throughout the event.

Detailed Information about Meals and Refreshments can be found [here](#).

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## Sleep

All sleeping spaces will have blankets, pillows, and air mattresses (except for the sleeping bag room which is located on the first floor).

E6: Open from Sat. 12am - Sun. 1pm

- Floor 1: Men-only
- Floor 2: Men-only
- Floor 3: Women-only, accessible from E7 via bridge.
- Floor 4: Gender Neutral
- Floor 5: Women-only

Lights in E6 will not turn off. If you need them, sleeping masks will be available at the front desk.

E5: Open from Sat. 12am - Sun. 1pm

- Floor 6: Rooms 6008, 6006, 6004, 6003, as well as the area behind the main stairwell on floor 6, all gender neutral

E7: Open from Sat. 12am - Sun. 8am

- Room 1302: Sleeping bag room. This will be a quiet carpeted area for hackers who brought their own sleeping bag

## Hacker Luggage Storage

If you are a hacker, you are expected to **keep your luggage with you throughout the duration of the event**. Please make sure to keep all your valuables near you at all times and ensure that nothing is left behind at Hack the North.

For Closing Ceremonies on Sunday, hackers will be able to store their luggage in the first floor **Activities Room** before the event. This area will be locked and supervised by organizers throughout the duration of the closing ceremonies. After the event, hackers can retrieve their luggage and get ready to depart from Hack the North.

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## Charts

This year, we're excited to introduce a fun new way for hackers to connect with each other through **Charts!** Start by checking out your hacker dashboard, where you can answer some fun questions about yourself and your interests. Then head over to **charts.hackthenorth.com** to see how your answers compare with others!

# Project Judging

Like previous years, Hack the North will continue to offer you the opportunity to present your creation in front of a panel of industry experts! We're also excited to introduce a revamped rubric with a direct focus on transparency. This will give you a clearer understanding of what our judges will be looking for when evaluating your project. We can't wait to see what you'll create!

For a full list of submission rules and more information on our new judging criteria, please refer to: [HTN 2024 Submission Rules](#) and our [devpost!](#)

Also take the time to look at some of the API prizes that our sponsors have generously donated! Each API prize will have their own specific requirements, so make sure you carefully read over each prize's project eligibility. For more information check out our [devpost!](#)

# Hardware

## Shopify Hardware Hub

Attention all hardware hackers! This year, our dedicated Shopify Hardware Hub has something for everyone - whether you're new to hardware projects or an experienced hacker. Located on the first floor of E7 in rooms 1427/1437 the hardware hacking hub offers features such as

- Large tables designed for working on hardware hacks
- Unlimited access to soldering irons, glue guns and various hand tools
- Oscilloscopes, multimeters and power supplies
- Dedicated hardware mentors
- A drone room
- Hardware checkout and return open all weekend except Saturday 2 AM - 9 AM and Sunday 2 AM - 7 AM

**Note:** For hacker safety, using machine tools and soldering is permitted only in the Shopify Hardware Hub.

## Hardware Checkout

From basic hardware components like Arduinos, sensors, and motors to the latest tech such as VR headsets, BCIs, and OpenMV cameras, we offer a wide variety of items available for you to borrow for the weekend! You can request items before hacking starts or anytime throughout the weekend.

You must request items through the Hardware page on [my.hackthenorth.com](http://my.hackthenorth.com) first! Once your items are ready, you'll receive an email and you can come to the hardware checkout desk in the Hardware Hacking Hub to pick up your items.

If the hardware you receive is defective or you think that you may have damaged it, please bring it back to the hardware checkout desk as soon as possible. Replacements may be available, but please always inform us if your hardware is broken so that we don't redistribute it to other hackers — you will not be required to pay for any broken hardware unless it is evident that it was damaged from intentional misuse.

## 3D Printing and Laser Cutting

This year, we have 24/7 access to 3D printing to bring your ideas to life! Additionally, laser cutting machines will be available Saturday afternoon—timings to be announced in #hardware on slack! Check out the 10+ Prusa printers and laser cutting machines located in the 3D print lab on the second floor of E5, just past the organizer HQ.

3D printers are available on a **first-come-first-served basis** throughout the weekend and laser cutting machines will **ONLY** be available during the specific times. To speed up the process, have your design ready to go in an STL file format and our volunteers will guide you through the next steps once you arrive at the print lab!

## Drone Policy

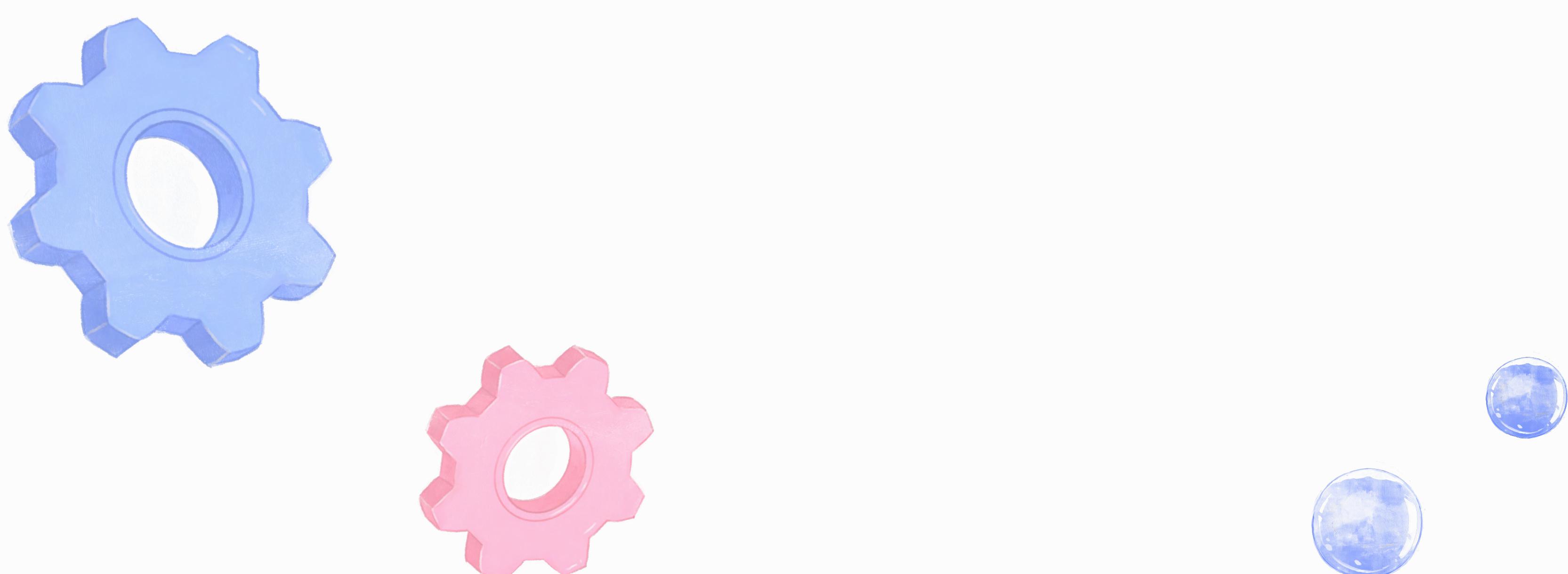
We are excited to give you the chance to hack on drones this year, but for everyone's safety, we have a few **strict rules**:

- Drones may only be flown in the designated drone room
- Must be less than 250g, and must have propeller guards
- There can only be one team in the drone room at a time

You may **NOT** under any circumstances:

- Fly drones that are larger than 250g
- Fly drones outdoors, in hallways, or anywhere other than the designated drone room, found in the Shopify Hardware Hub

**Please note that under Canadian law, it is illegal to fly drones larger than 250g without a drone pilot license.**



# Mentorship

## Mentors at Hack the North



Whether you're debugging, looking for best practices, or brainstorming your next big idea, our mentors are here to guide you. Facing a challenge during Hack the North? Don't stress—our mentors are ready to help you overcome obstacles and turn your innovative ideas into reality!

Our mentors come from diverse backgrounds, bringing a wealth of knowledge in various tech fields. They are not just problem solvers, but also inspirational figures who can spark new ideas and provide valuable feedback. If you're looking to take a break from your projects or just want to chat with our mentors for fun, feel free to drop by the mentor bay for some board games and origami with other hackers and mentors—all weekend long!

Can't find our mentors? Submit a request on our [mentorship tool](#)—simply login with your account, submit a request, and our mentors will be right there to help you!

## Hackathon Hosts at Hack the North

Hackathon hosts are dedicated to nurturing our hackers, guiding you through your projects from start to finish. Working hands-on with the same team throughout the weekend, they offer consistent support and insights to ensure you feel guided and supported during your first hackathon.

Our hosts are passionate and experienced hackers ready to share their wisdom and help you overcome challenges. They'll answer your questions, provide mentorship, and inspire creativity to make sure you stay on track and feel confident with your project and your pitch to the judges. If you'd like to be paired with a hackathon host and did not indicate so on your RSVP, please join us at MLH Team Formation or message @/lan on Slack for more details!

# Schedule

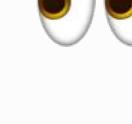
## Opening Ceremony

-  **When:** Friday, 9:00 PM - 11:00 PM
-  **Where:** Lazaridis Hall, 64 University Ave W,  
Waterloo, ON N2L 3C7
-  **Highlights:** Energizing talks from inspiring speakers,  
engaging speeches from sponsors, and free  
swag tossed into the crowd!

## Closing Ceremony

-  **When:** Sunday, 2:30 PM - 4:00 PM
-  **Where:** Lazaridis Hall, 64 University Ave W,  
Waterloo, ON N2L 3C7
-  **Highlights:** Exciting presentations from sponsors,  
announcements of finalist and sponsor  
prizes, and a final round of exciting  
giveaways!

## Hacky Hour

Hacky Hour is an **all-new experience** that we're offering this year! Taking place on **Sunday from 12:30 to 2:00 PM**, Hacky Hour is your chance to take a break, get some refreshments, and rest up before the closing ceremony! Take some time to enjoy the casual environment and talk to fellow hackers, mentors, and other industry professionals! (Psst, you might even have the chance to talk to some of the judges 

## Outdoor Workspace

Located under the RBC Oasis tent, this outdoor workspace is available for use throughout the entire duration of the event. It features comfortable seating options, a relaxed ambiance, and a snack bar to keep you refreshed. Whether you want to chill with friends or make new connections, this is the perfect spot to unwind and socialize!

## Event-long Activities

Event-long activities are available throughout the whole weekend! Check them out below.

**Location:** E7 1st floor, near help desk

**Hacker world map:** Tell us where you are from!

**Hack the North puzzle:** Collaborate with other hackers to finish a 500-piece puzzle!

**Origami:** Come fold some cute paper cranes with friends!

**Board games:** Chess and Giant Jenga awaits!

## Empowerment Lounge & Meetups

The empowerment lounge returns this year at the Pitch Space in E7 by the big windows across from Sponsor Bay. This is where all meetups throughout the weekend will occur. Drop by any time for a cozy, safe space for all attendees—have conversations with other hackers, join in on activities, and remember that **YOU** belong in tech!

You can also find the event schedule on [my.hackthenorth.com](http://my.hackthenorth.com), which includes additional details like dietary information for food and workshop hack packs.

Specific information about panels, workshops, sponsor API workshops, and other sponsor-related events can be found in their respective sections of this welcome booklet!

## Core Schedule

### Friday, September 13

5:30 PM - 11:00 PM

*RBC Oasis Tent*

**Registration**

6:00 PM - 12:00 AM

*RBC Oasis Tent*

**Dinner: Chicken/Chick'N Alfredo**

9:00 PM - 11:00 PM

*Lazaridis Hall*

**Opening Ceremonies**

9:30 PM - 12:00 AM

*E7 1st Floor*

**Balloon Animals**

10:00 PM - 2:00 AM

*RBC Oasis Tent*

**Snack: Funnel Cakes**

10:00 PM

*Shopify Hardware Hub*

**Hardware Checkout Opens**

Reserve your hardware in advance on  
[my.hackthenorth.com!](http://my.hackthenorth.com!)

11:00 PM - 11:30 AM

*Activities Room*

**Icebreakers**

11:30 PM - 12:00 AM

*Activities Room*

**Team Formation with MLH**

# Saturday, September 14

12:00 AM	<b>Hacking starts!</b> See page 10 for project submission rules.
12:00 AM - 3:30 AM <i>Rooms 4A-5B</i>	<b>Hacker Workshops</b> See pages 21-22 for more details!
12:00 AM - 3:30 AM <i>Rooms 3A-5B</i>	<b>Sponsor API Workshops</b> See pages 25-28 for more details!
8:00 AM - 10:00 AM <i>RBC Oasis Tent</i>	<b>Breakfast: Waffle Bar</b>
9:00 AM - 9:45 AM <i>Empowerment Lounge</i>	<b>Yoga</b>
10:00 AM - 1:00 PM <i>Coffee Chat Rooms A-C</i>	<b>Sponsor Coffee Chats</b>
10:00 AM - 11:00 AM <i>Activities Room</i>	<b>MLH: Making Better Hacks, Faster with GitHub Copilot)</b>
10:00 AM - 4:00 PM <i>Rooms 3A-4B</i>	<b>Hacker Workshops</b> See pages 22-24 for more details!
10:30 AM - 2:30 PM <i>Rooms 4C-5B</i>	<b>Lightning Challenges and Tech Talks</b> See pages 29-30 for more details!
11:30 AM - 2:30 PM <i>E7 1st Floor</i>	<b>Customize Your Tote Bag!</b>
1:00 PM - 3:30 PM <i>RBC Oasis Tent</i>	<b>Lunch: Chicken, Beef, and Veggie Burgers</b>
1:00 PM - 2:00 PM <i>Activities Room</i>	<b>Therapy Dogs</b>
1:00 PM - 6:00 PM <i>E7 1st Floor</i>	<b>Photo Booth</b>

1:30 PM - 5:00 PM	<b>Sponsor Office Hours</b>
<i>Room 5A</i>	
2:00 PM - 4:00 PM	<b>Bubble Soccer</b>
<i>V1 Green</i>	
2:00 PM - 8:30 PM	<b>Panels</b>
<i>Rooms 3B and 7A</i>	See page 20 for more details!
2:30 PM - 3:30 PM	<b>MS Paint Bob Ross with MLH</b>
<i>Activities Room</i>	
3:00 PM - 11:30 PM	<b>Meetups</b>
<i>Empowerment Lounge</i>	
4:00 PM - 5:30 PM	<b>Snack: Ice Cream</b>
<i>RBC Oasis Tent - Outdoor Work Space</i>	
5:00 PM - 9:00 PM	<b>Gaming Lounge</b>
<i>Activities Room</i>	
6:00 PM - 10:00 PM	<b>Dinner: Power Bowls</b>
<i>RBC Oasis Tent</i>	
7:30 PM - 9:00 PM	<b>Karaoke</b>
<i>RBC Oasis Tent</i>	
9:30 PM - 11:30 PM	<b>Snack: Soup</b>
<i>RBC Oasis Tent</i>	
10:30 PM - 11:30 PM	<b>Trivia</b>
<i>Activities Room</i>	
10:30 PM - 1:00 AM	<b>Silent Disco</b>
<i>Design Bay</i>	

# Sunday, September 15

12:30 AM - 1:30 AM  
*Activities Room*

## **Hot Sauce Challenge**

12:30 AM - 2:30 AM  
*RBC Oasis Tent*

## **Snack: Poutine**

2:00 AM - 4:00 AM  
*Activities Room*

## **Movie Night**

8:00 AM - 10:30 AM  
*RBC Oasis Tent*

## **Breakfast: Breakfast Bowls**

8:00 AM  
*Shopify Hardware Hub*

## **Hardware Checkout Closes**

8:00 AM

## **Hacking ends!**

Submissions are due on Devpost.

10:00 AM - 1:00 PM  
*Judging Rooms A-L*

## **Judging Block**

Judging rooms will be assigned to each group via Slack and Attendee Dashboard.

10:00 AM - 2:00 PM  
*Shopify Hardware Hub*

## **Hardware Return**

Please return all hardware that you borrowed throughout the duration of the event!

11:00 AM - 1:00 PM  
*RBC Oasis Tent*

## **Lunch: Walking Tacos**

12:30 PM - 2:00 PM  
*E7 1st Floor*

## **Hacky Hour**

Get the opportunity to grab a snack, meet hackers, and learn more about each other's projects! See page 14 for more details!

2:30 PM - 4:30 PM  
*Lazaridis Hall*

## **Closing Ceremonies**

Wrap up the weekend and check out live demos of our finalists' amazing projects!

4:00 PM - 4:30 PM  
*Shopify Hardware Hub*

## **Finalist Hardware Return**

If you were a finalist, please return all hardware that you borrowed throughout the duration of the event!

# Panels

What's even better than hearing from one speaker? Hearing from four at the same time! This year's event features four captivating panels that will ignite your imagination and provide invaluable insights into the future of technology and career planning 🌟 - Whether you're a seasoned hacker or new to the scene, these discussions will offer something for everyone to dive in and get inspired!

## Saturday, September 14

### O or 1: Idea to Startup

2:00 PM - 3:00 PM | Workshop Room 7A

Join us for an insightful panel discussion featuring past founders as well as leading experts in venture capital & entrepreneurship. The panel will focus on sharing how you can take your Hack the North projects to the next level. Gain valuable insights from seasoned professionals about their experiences and strategies for success. This is a fantastic opportunity for aspiring innovators to learn from industry leaders and discover how to navigate their entrepreneurial paths. Don't miss out!

### What the Future - What's Next for Generative AI?

4:00 PM - 5:00 PM | Workshop Room 7A

First we got the internet, then we got the iPhone, and now we have ChatGPT—what's next? Our visionary panelists will delve into the latest trends, groundbreaking applications, and the limitless potential of generative AI. Get ready to explore the scaling dilemmas, industry impacts, and the exciting possibilities that lie ahead. This is your chance to learn from the trailblazers who are shaping the future of AI!

### Cracking the Career Code

5:30 PM - 6:30 PM | Workshop Room 7A

Have you ever wondered what path you should follow in tech? If so, you're in luck! This dynamic panel will demystify the decision-making process by comparing the thrills and challenges of various career options. Whether you're torn between the allure of startups and the stability of big tech, debating between hardware, software engineering, and quant roles, or contemplating the leap into entrepreneurship, our expert panelists have you covered. Hear their personal stories, gain invaluable tips, and get inspired to chart your own unique career path!

### HTN Night Live: Resume Edition

9:00 PM - 10:00 PM | Workshop Room 3B

Join us for an interactive experience where your resume takes center stage! In this unique session, you and your fellow hackers can submit your resume to receive live, constructive feedback from our panelists, each with a wealth of experience in the workplace. Whether you're looking for your next internship or just want a fun break from hacking, come join us for some tips and tricks, and a good laugh!

# General Workshops

## Presented by Hack the North

We're thrilled to introduce an exciting lineup of workshops at Hack the North! This year, we're bringing you a diverse array of hands-on workshops designed to fuel your creativity, enhance your skills, and push the boundaries of innovation. Whether you're looking to dive deep into new technologies, refine your coding skills, or explore the latest trends, our workshops have something for everyone.

Our workshops are specially crafted to provide a practical, immersive experience, with a focus on hands-on experiences this year. You'll have the opportunity to engage directly with cutting-edge tools and technologies, guided by industry experts and seasoned mentors. Plus, for those who love a bit of swag, we have an exclusive offer: visit our workshops and collect unique stickers available only during that workshop!

## Saturday, September 14

### **Creation Lab: Kickstart Your Hackathon Idea**

12:00 AM - 1:00 AM | Workshop Room 4A

Creation Lab is an engaging workshop designed to help kickstart your hackathon journey. Whether you're new to hackathons or looking for inspiration, this session will help guide you through the creative process of brainstorming ideas using design thinking principles. Through interactive activities, you'll explore real-world problems, generate innovative solutions, and develop a clear project focus for HTN. You'll also get the chance to connect with fellow hackers, and work together in teams to go from zero to idea!

### **Design Engineering (& Tactically Using Figma)**

12:00 AM - 1:00 AM | Workshop Room 4B

Everything you interact with was designed by someone. Bridge the divide between the design and development worlds with this design engineering workshop. Figma is our design weapon of choice — you'll learn some good habits and shortcuts, how to actually wireframe your prototype, handing off to dev, and generally how to make something look decent by picking the right combination of fonts, colours, icons and more.

### **Rapid Web Development: Everything Frontend in <1 Hour**

12:00 AM - 1:00 AM | Workshop Room 4C

From design and prototyping to selective rendering and APIs, you will be exposed to all of the tools for quickly developing a modern frontend.

## **Mobile App Development**

**1:30 AM - 2:30 AM | Workshop Room 4A**

Dive into cross-platform app development on iOS, Android and web apps with Flutter, covering everything from basics to a full production level. We'll compare other cross-platform SDKs, like React Native, highlighting pros and cons of each, stemming from production level experience. By the end, you'll develop a simple application that can run on your own mobile phone and gain a solid understanding of the mobile app development life cycle.

## **A Dreamer's Guide to AR/VR Development**

**1:30 AM - 2:30 AM | Workshop Room 4B**

An introductory workshop for designing spatial apps in Unity, with a former HTN Finalist! Learn the basics of the Unity Engine with C# scripting, as well as how to integrate hand tracking input using Meta SDK. Get introduced to interactables for designing UI, and how to get creative with designing immersive experiences. By the end of the workshop, you'll have a starter AR project that is easily extendable into an idea of your own.

## **Hypermedia & HTMX - A Different Approach To Full-Stack Development**

**1:30 AM - 2:30 AM | Workshop Room 4C**

Building modern web applications doesn't need to be complicated. In this workshop, we'll explore how hypermedia concepts and the HTMX library can be used to build dynamic web applications with less code, less complexity, and most importantly, less JavaScript. HTMX is a library that lets you access modern browser features directly from HTML, minimizing the need for JavaScript. It's versatile - working with any back-end framework. Paired with Flask on the back-end, we'll be using HTMX to build a fully-featured application with remarkably little code. Whether you're experienced or new to web development, you'll find HTMX a breath of fresh air.

## **Fantastic Agents and How to Build Them**

**10:00 AM - 11:00 AM | Workshop Room 4A**

Learn how to build LLM-based autonomous AI agents. We'll work through learning what agents are and build a whole agent within the workshop. Use the skills you learn to prototype for your hackathon project!

## **Spark It Up: Igniting Big Data**

**10:00 AM - 11:00 AM | Workshop Room 4B**

This workshop aims to introduce participants to one of the most used technologies in the realm of Big Data - Apache Spark. We will cover what Spark is, how it works, why it is so useful, all while working through a hands-on activity to allow participants to get their hands dirty with Apache Spark, and explore what it has to offer. The Apache Spark framework will be used with the Python programming language (PySpark).

## **Printed Circuit Boards 101: Building a Binary Clock**

**11:00 AM - 12:00 PM | Workshop Room 3A**

No experience needed! Learn about printed circuit boards (PCBs), the backbone of modern electronics. This is a great introduction to (or refresher in) the hardware that runs everything from your favourite video game to the newest AI technology. We'll be learning about the endless applications of PCBs. Then, you'll have the opportunity to design your own PCB clock and learn about how you can get it printed and built. This hands-on workshop will lead you through schematic design, choosing components, and creating your final, working project!

## **Intro to Rust: Oxidize the Classic Command-Line App**

**11:00 AM - 12:00 PM | Workshop Room 3B**

Get started with Rust development by building a command-line app! This workshop will cover Rust basics, command-line and terminal interfaces, and basic encryption.

## **Hacking Web Applications: An Introduction to Common Web Vulnerabilities for CTFs and Real-Life Pentests**

**12:00 PM - 1:00 PM | Workshop Room 4A**

This workshop provides an in-depth exploration of common web vulnerabilities and their practical applications for CTFs and real-life penetests. Participants will gain hands-on experience with industry-standard tools like BurpSuite, while exploring critical web vulnerabilities, including Cross-Site Scripting (XSS), SQL Injection (SQLi), and Cross-Site Request Forgery (CSRF). Each section will cover the foundational concepts needed to thoroughly understand each vulnerability, the various types of each, and effective detection techniques. Practical demonstrations will guide you through crafting exploit queries, and the workshop will conclude with best practices and preventative strategies to secure web applications against these threats.

## **From Pit Stop to Podium: Mastering Technical Project Management for Complex Engineering Teams**

**12:00 PM - 1:00 PM | Workshop Room 4B**

This workshop focuses on technical project management within the context of developing a fully autonomous Indy race car. Participants will learn strategies for leading a large, multi-layered, technically diverse team through the stages of designing, building, and racing a self-driving race car.

## **Causal Inference: AI Beyond Correlations and ML**

**1:00 PM - 2:00 PM | Workshop Room 3A**

If you've ever heard the phrase "correlation ≠ causation", you've already encountered the concept of causal inference. If not, even better! Causal inference is the science of determining how causation can be inferred from correlations, whether correlations arise by chance or from something deeper, and unlocking a new set of questions and capabilities. These include handling unseen-before events and answering questions about intervention effects or counterfactuals. This workshop will equip students with the intuition and technical tools to achieve these insights, blending theory with practical hands-on skills in the popular Python causal inference libraries.

## **Introduction to Nvidia CUDA**

**1:00 PM - 2:00 PM | Workshop Room 3B**

Join an interactive session on Nvidia CUDA programming, utilizing Google Colab and nvcc4jupyter. This workshop will cover essential CUDA concepts, including the differences between host and device code, CUDA kernels, thread blocks, and CUDA memory allocation. Hackers will engage in hands-on activities starting from implementing "Hello World" in CUDA to parallelizing and benchmarking 400M vector addition. Targeted for beginners with working knowledge of C/C++, this workshop will provide a general idea of CUDA programming, enabling hackers to experience the power of GPU computation.

## **What They Don't Tell You About Technical Interviews**

**2:00 PM - 3:00 PM | Workshop Room 4A**

It's easy to think that technical interviews are just about your knowledge of data structures and algorithms, but they really aren't. There's so many other aspects to them, but these aspects often get left out in our discussions around technical interviews. After all, multiple people can solve a given problem, but only a couple will have offers extended to them. So, what are these candidates doing differently? How is their approach to this process unique compared to all others? That is what we'll explore with this workshop.

## **Hackathon Pitching 101**

**2:00 PM - 3:00 PM | Workshop Room 4B**

While writing code and having a great idea are important parts of winning hackathons, knowing how to write and deliver a strong pitch for your project is also vital. This workshop will teach you the core skills you need to pitch your project to judges and help you build the confidence to demo on Sunday. You'll learn the dos and don'ts of demoing, what judges are looking for, and how to make the best use of your (very limited) time with them. This workshop is totally beginner friendly but everyone is welcome. :)

# Sponsor API Workshops

## Saturday, September 14

### **Convex: How to use the Convex backend platform to build a full-stack web app in minutes**

12:00 AM - 12:30 AM | Workshop Room 3A

Convex (<https://convex.dev>) is a full-featured backend platform for rapid web app development, and in this workshop you'll learn all the basics you need to start building on Convex. Through a demo app and hands-on exercises you'll learn how to write serverless functions to store & retrieve data in your Convex database, and use the React client library to connect your app's UI to your Convex backend. By the end of the workshop, you'll start prototyping your own app using Convex's handy app templates.

### **Groq: How to Use Groq Cloud for the Fast AI Inference**

12:00 AM - 12:30 AM | Workshop Room 3B

Join Andrew Ling, VP SW Engineering and ML Compilers to see how Groq powers leading openly-available AI models like Llama 3.1. He'll show you some amazing demos running on Groq, and then he'll show you how to move seamlessly to Groq from other providers like OpenAI by changing three lines of code.

### **RBC Avion Rewards — Making Your Point with Points**

12:30 AM - 1:00 AM | Workshop Room 5A

Join our Tech@RBC API Workshop to explore Avion Rewards, one of Canada's fastest-growing rewards programs. Learn how to leverage RBC's upcoming Developer Portal and APIs to create innovative solutions. We'll guide you through the rewards business, showing you how to engage customers with offers, cashback, and points. This workshop will equip you with the skills to navigate and utilize our public-facing APIs, helping you excel in your challenge. Don't miss this opportunity to gain insights and hands-on experience with RBC's cutting-edge tools. Let's make an impact together!

## **Genesys: Empowering Empathetic Experiences - Unleashing the Power of Genesys Cloud APIs**

*12:30 AM - 1:00 AM | Workshop Room 5B*

Genesys Cloud offers a plethora of APIs that open up a world of possibilities to create empathetic experiences for customers. With the ability to send customer surveys, perform sentiment analysis, topics detection, and various other features we have an opportunity to revolutionize end user experiences. Join us on this journey to push the boundaries of innovation and redefine customer engagement!

## **MASV: Mastering MASV's API**

*1:00 AM - 1:30 AM | Workshop Room 3A*

Dive into MASV's hands-on API Workshop and discover how to seamlessly incorporate MASV into your projects. This workshop is your chance to grasp the full potential of MASV's API, and potentially walk away with a \$1000 CAD Amazon gift card.

By participating, you'll learn to enable simple, fast, and scalable data transfers that will significantly boost your project's functionality. If by the end of Hack the North your project stands out with the most impressive MASV integration, the grand prize could be yours.

Don't miss out; join us at the MASV API Workshop.

## **Voiceflow: Building AI Agents quickly with Voiceflow**

*1:00 AM - 1:30 AM | Workshop Room 3B*

Join us for a fast-paced workshop on Voiceflow, the platform that lets you build powerful AI agents and apps with ease. In just 30 minutes, you'll set up your Voiceflow account, learn the basics of building AI agents, and dive into using our APIs to build anything. We'll show you how to unlock endless possibilities, from chatbots to advanced agents. Plus, get exclusive access to our docs and tutorials to level up your projects. Perfect for hackers looking to innovate fast!

## **Cohere: Build an LLM Agent with Multi-Step Tool Use**

*1:30 AM - 2:00 AM | Workshop Room 5A*

Learn how to use Cohere's API and create a smart agent using a language model that can perform complex tasks by using multiple tools in sequence.

## **Pinecone: Build a Knowledgeable Assistant with Pinecone Assistant**

**1:30 AM - 2:00 AM | Workshop Room 5B**

Elevate your hackathon project with Pinecone Assistant. Join our API Workshop to learn how to rapidly develop AI assistants that can answer complex questions about your own custom data. In this session, you'll discover how to:

- Create AI assistants using simple API calls
- Generate accurate, data-grounded responses
- Quickly prototype and integrate assistants into your project

Whether you're new to AI or an experienced developer, you'll gain valuable skills to make your hackathon project stand out. Don't miss this opportunity to explore cutting-edge AI technology!

## **Chroma: Building AI applications**

**2:00 AM - 2:30 AM | Workshop Room 3A**

AI is a new way of building software that enables us to process unstructured data in a common sense way. The useful things we can build with this are endless. Hear from Anton Troynikov, co-founder and CTO Chroma, on how to do it.

## **MappedIn: Make a Map, Build an App (in Minutes)**

**2:00 AM - 2:30 AM | Workshop Room 3B**

Join us for an interactive workshop where you will learn how to create your own map and deploy it in a local environment, all in just a few minutes. This hands-on session will provide you with the tools and knowledge needed to build and customize your maps using Mappedin's powerful features.

## **CSE: The Most Interesting Organization That You've Never Heard Of**

**2:30 AM - 3:00 AM | Workshop Room 5A**

CSE is one of the most interesting workplaces in Canada -- and not just in the government. CSE is Canada's cryptological agency, its foreign signals intelligence agency, its CSIRT and Canada's lead for foreign cyber operations. What does all of that mean? Come hear about the work we do, the mandates we serve, the skills we're looking for, and ask us your questions in our extended Q&A!

## Intuit Workshop

2:30 AM - 3:00 AM | Workshop Room 5B

### AWS: Unleashing the Power of AI/ML: From Industry Disruption to Text Generation with AWS Bedrock

3:00 AM - 3:30 AM | Workshop Room 3A

This workshop aims to explore what AI/ML is and how it is being used in the industry from the AWS lens. We will take a look at different AI/ML offerings on AWS. There will be a short workshop on text generation and summarization using Amazon Bedrock. Before the workshop, please [go through the following steps](#) and ensure your account is generated.

Note: the workshop link and workshop code will be sent 24-48 hours before the event

### Defang: ☁ Cloud Jam by Defang

3:00 AM - 3:30 AM | Workshop Room 3B

Join us for ☁ Cloud Jam! This hands-on workshop is designed to level up your cloud development skills, giving you invaluable insights and practical know-how on using Docker and Defang to develop, deploy, and debug your cloud applications. Presented by Defang and led by our Co-founder and CTO, Lionello Lunesu.

### Warp: How to become a Command Line Connoisseur

3:00 AM - 3:30 AM | Workshop Room 4A

In this workshop, we'll dive deep into terminal tips and tricks to increase your developer productivity. We'll also talk about how a terminal works and interacts with the shell + some fascinating history of terminals! From beginners to terminal veterans, we'll have something for everyone. This workshop is brought to you by the terminal experts at Warp, a blazingly-fast terminal app for the 21st century. Bring your laptops!



# Additional Sponsored Events

All held on Saturday, September 14th

## Lightning Challenges

### MASV

10:30 AM - 11:30 AM | Workshop Room 5B

Join us to test your skills and resilience with MASV's Lightning Challenge.

**The Challenge:** Hackers will be tasked with uploading a file to a specially configured local server. The catch? Success only counts when the entire file is uploaded and the MD5 hash matches.

To spice things up, the server is designed to mimic the harsh realities of real-world networking. Expect failures—such as connection time-outs that force a retry.

Your task is to highlight the complexities of network engineering, especially the strategies required to overcome various failure scenarios. Teams will need to think on their feet and are encouraged to consider chunked/multipart uploads, retry logic, and progress tracking.

**Judging and prizes:** The teams that best transfer files under these testing conditions will be awarded a \$300 CAD Amazon gift card for 1st place and \$200 CAD Amazon gift card for 2nd place.

### DRW

12:00 PM - 1:00 PM | Workshop Room 5A

Join our exclusive challenge and put your hacking skills to the test! You'll have just one hour to crack a complex code, designed to challenge even the most seasoned developers. This puzzle is inspired by one of our unique approaches to trading & was created by one of our very own Canadian employees! The first 3 hackers to crack the code will win exclusive, limited-edition DRW SWAG. Ready to take on the challenge? See you there.

### Codegen: Import Graph Visualization

1:30 PM - 2:30 PM | Workshop Room 5B

Your challenge will be to create an Import Graph Visualization of a provided Python codebase.

We recommend using the Python AST module or Tree-Sitter to parse out the imports, but feel free to use whatever you want. We recommend using NetworkX to represent the graph but feel free to use whatever you want. Use whatever visualization library you want to visualize your parsed graph.

Bonus points:

- A visualization that is actually understandable
- Draw some insights about the codebase using your visualization

## Tech Talks

### Cohere - Hallucination to Reality: The Power of RAG Systems

11:00 AM - 12:00 PM | Workshop Room 4C

The rise of LLMs that coherently use language has led to an appetite to ground the generation of these models in facts and private collections of data. This is motivated by the desire to reduce the hallucinations of these models, as well as supply them with up-to-date, often private information that is not a part of their training data. Retrieval-augmented generation is the method that uses a search step to ground models in relevant data sources. In this talk, we'll go in depth on advanced schematics of RAG systems and tips on how to improve them.

### Jane Street - Jane Street Tech Talk - "Aria"

1:00 PM - 2:00 PM | Workshop Room 4C

In this talk, we explore how transaction logs, state machine replication, and control flow inversion have allowed us to structure our applications in a way that lets us reliably deal with data races and process failures. We introduce Aria, a low-latency framework built on top of these ideas that has helped Jane Street scale our trading infrastructure while making it more performant, testable, and robust.

### Shopify - AI Unleashed: Transforming Tech with Intelligent Solutions

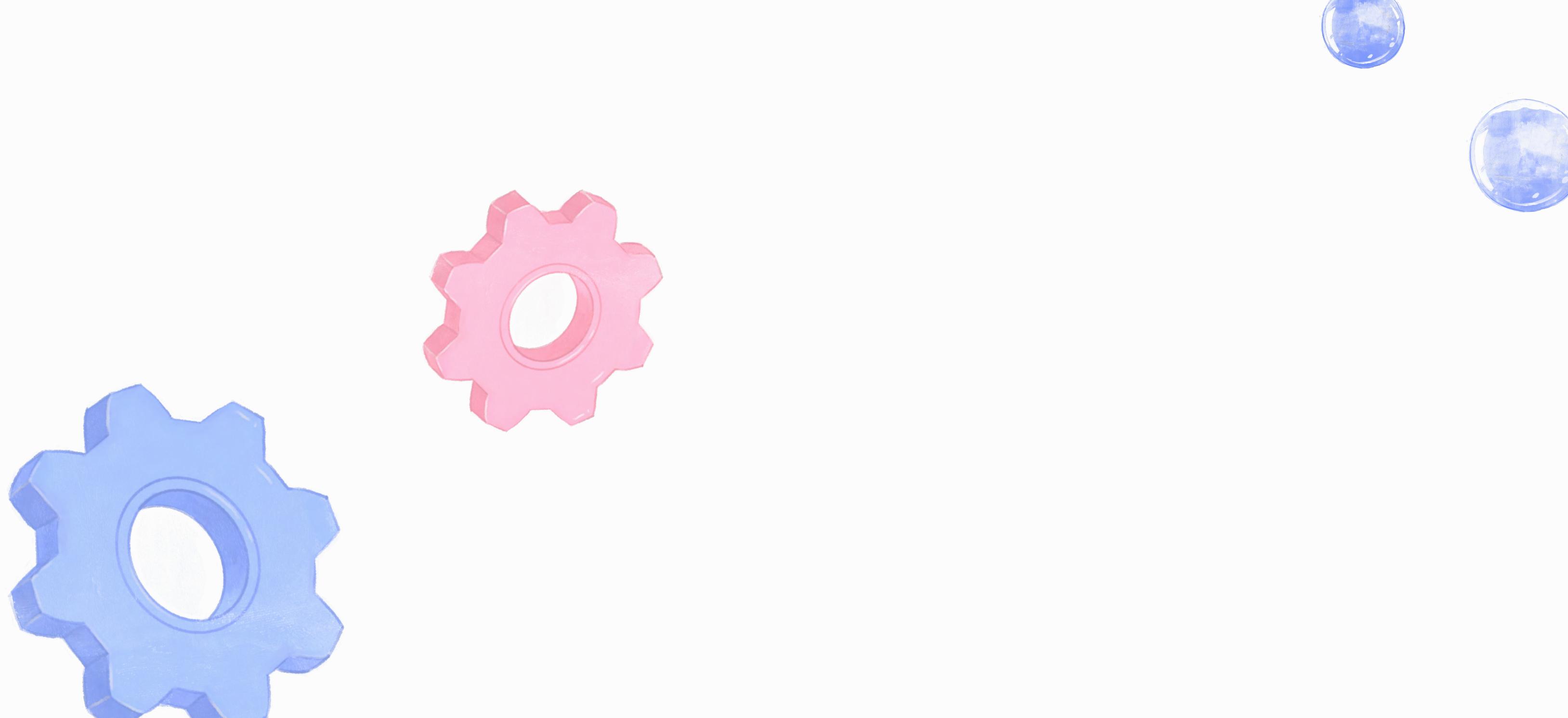
3:00 PM - 4:00 PM | Workshop Room 4C

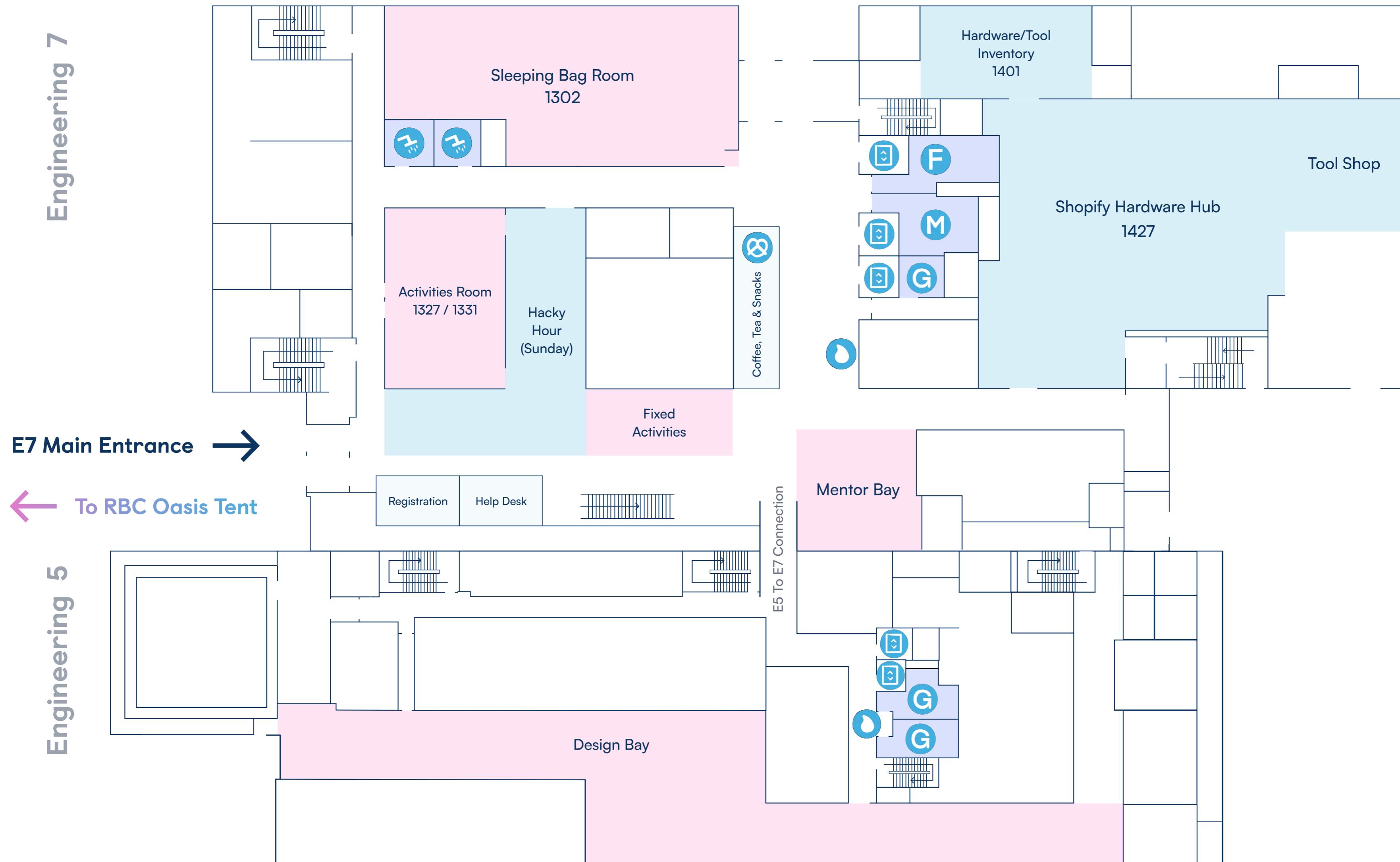
AI isn't just a buzzword; it's a revolution in how we interact with technology. Join us for a deep dive into the most exciting AI advancements and how they're changing the game across various fields. From personalized experiences to automated solutions, discover how you can harness AI to innovate and lead in your projects.

## Office Hours

1:30 PM - 5:00 PM | Workshop Room 5A

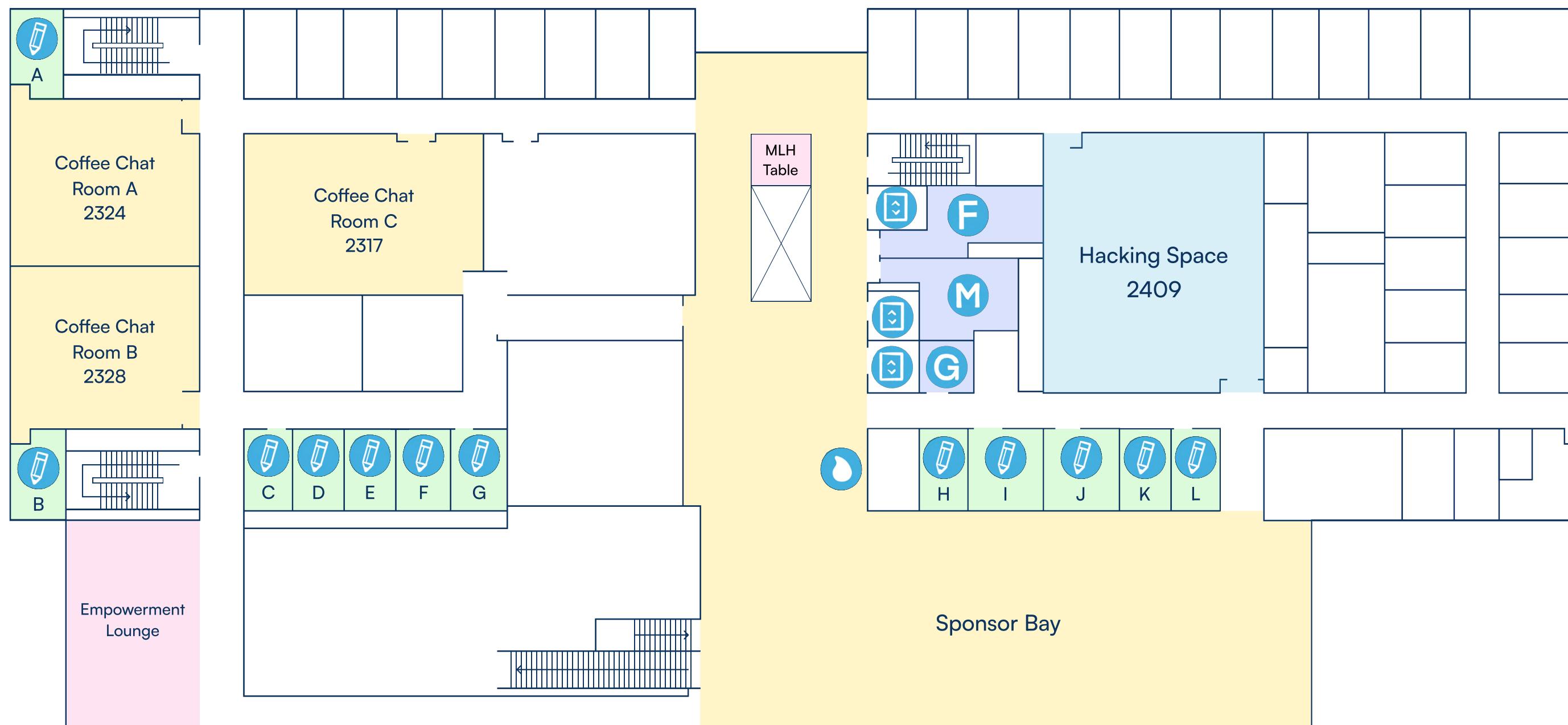
Have a question about a sponsor's API? Want to submit your project to an API prize? Drop by Office Hours to chat with sponsor representatives and get expert help with your project.



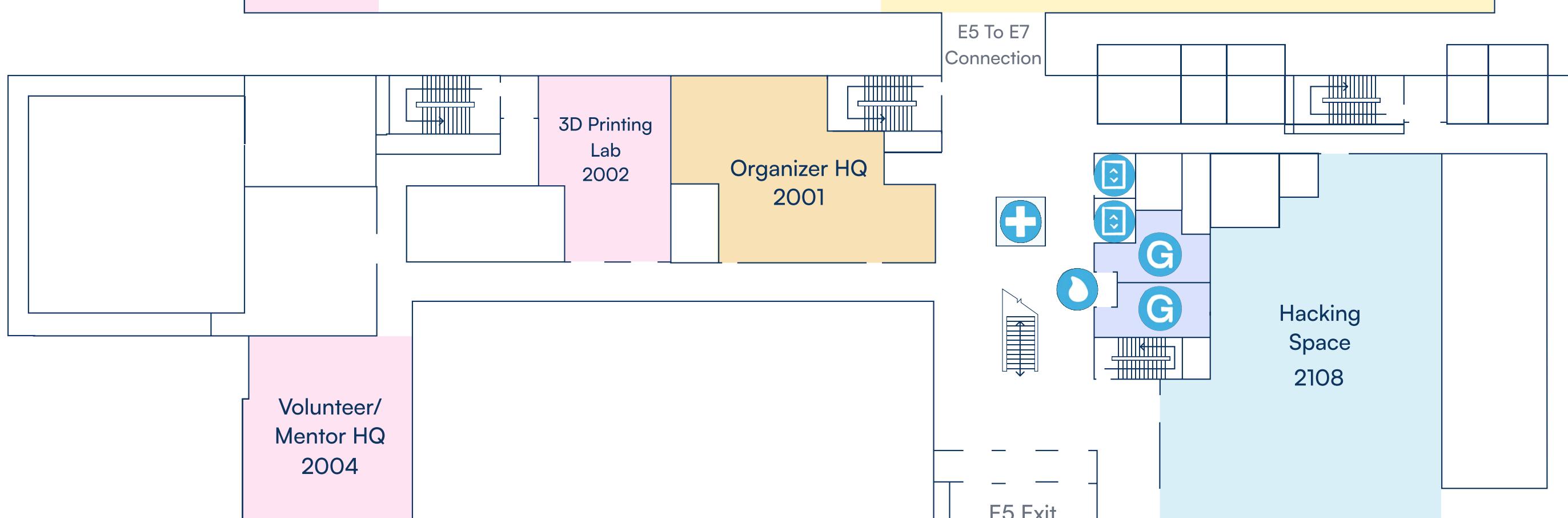


# E5 + E7 Floor 1

## Engineering 7



## Engineering 5



Elevator



Female Washroom



Male Washroom



Water Bottle Filling Station



Gender Neutral Washroom



Judging Room

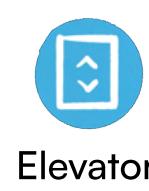
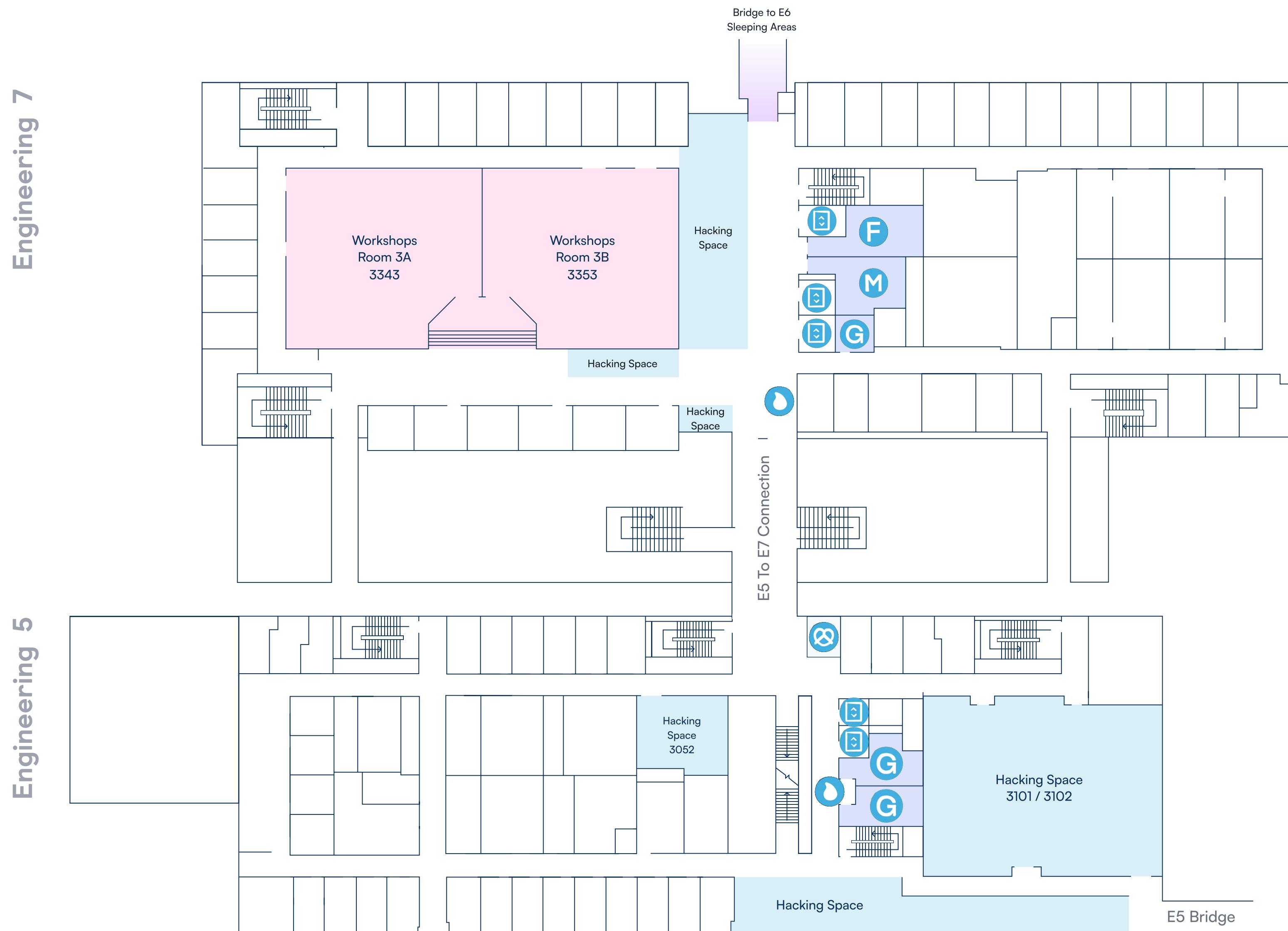


Snack Table



First Aid Table

# E5 + E7 Floor 2



Elevator



Female Washroom



Male Washroom



Water Bottle Filling Station



Gender Neutral Washroom



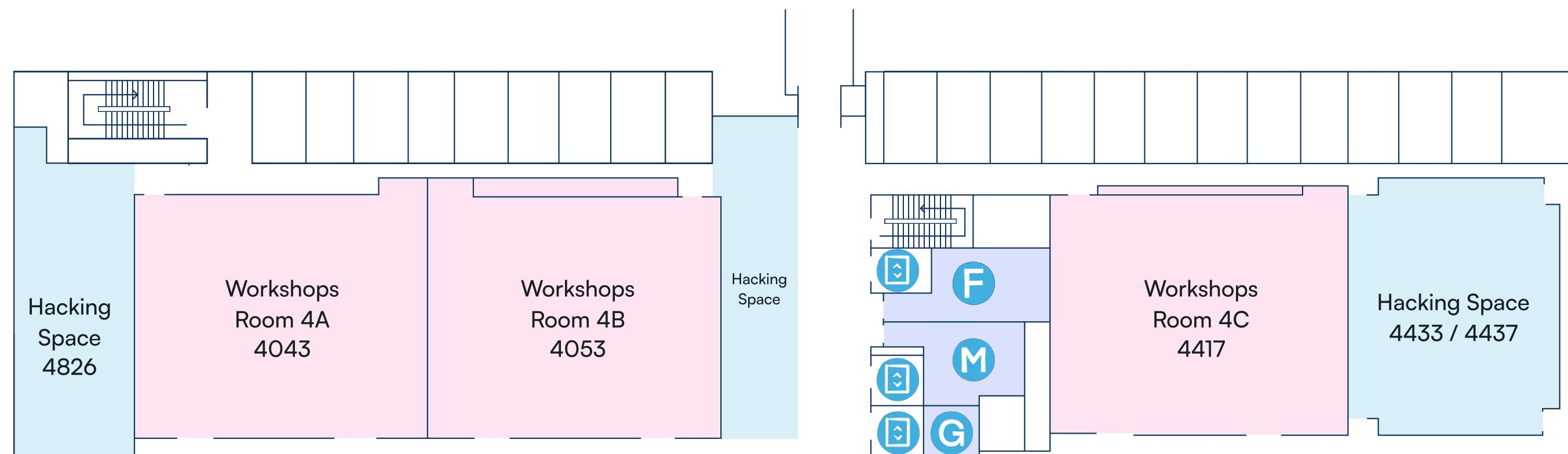
Judging Room



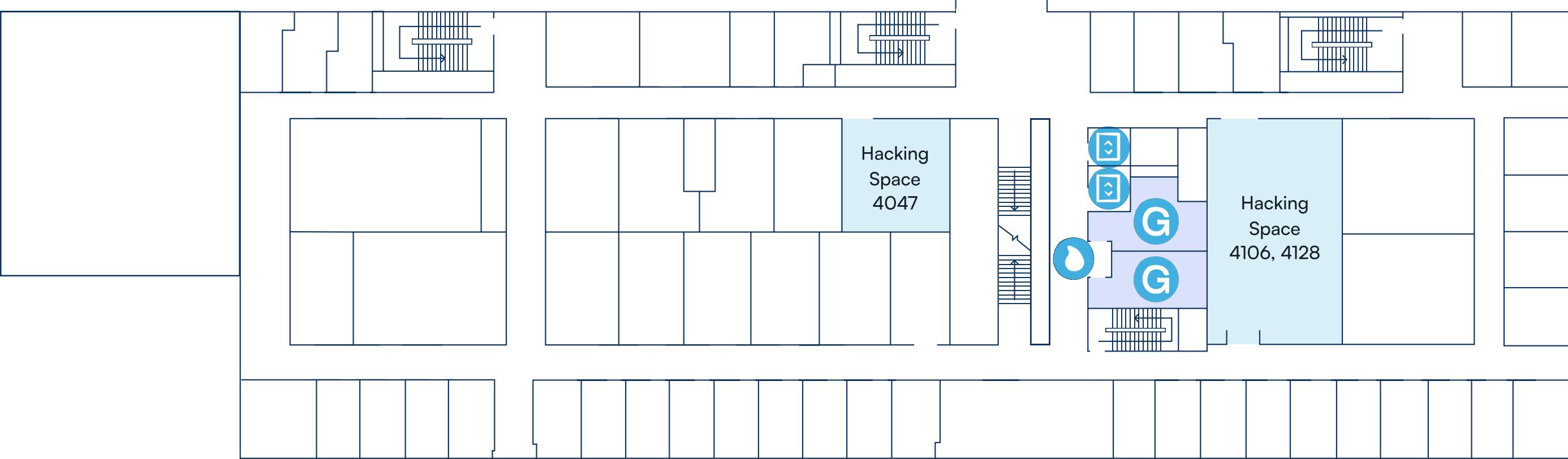
Snack Table

**E5 + E7 Floor 3**  
Cohere Commons

## Engineering 7



## Engineering 5



Elevator



Female Washroom



Male Washroom



Water Bottle Filling Station

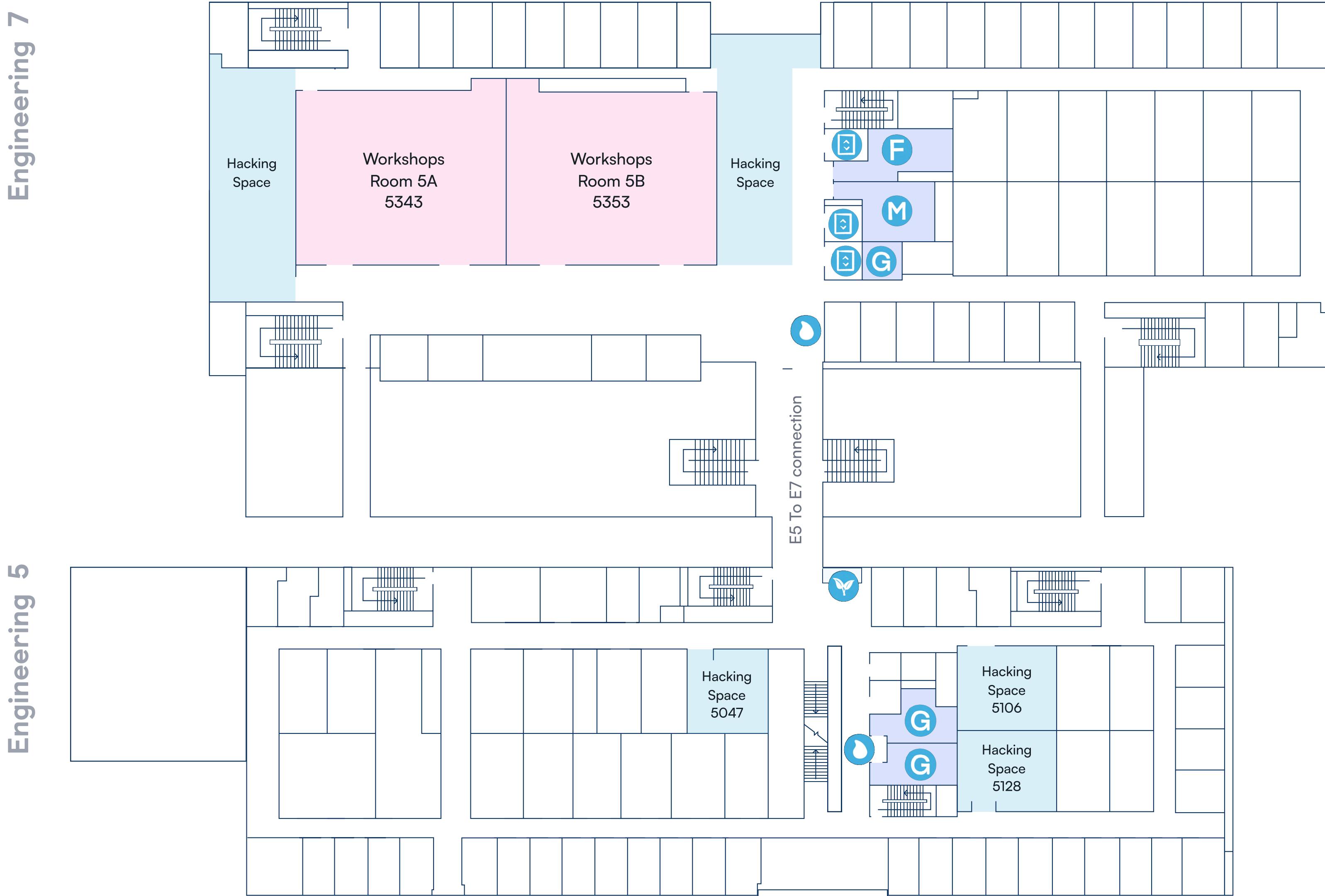


Gender Neutral Praying Room Washroom



E5 To E7 Connection

**E5 + E7 Floor 4**



Elevator



Female Washroom



Male Washroom



Water Bottle  
Filling Station



Gender Neutral  
Washroom



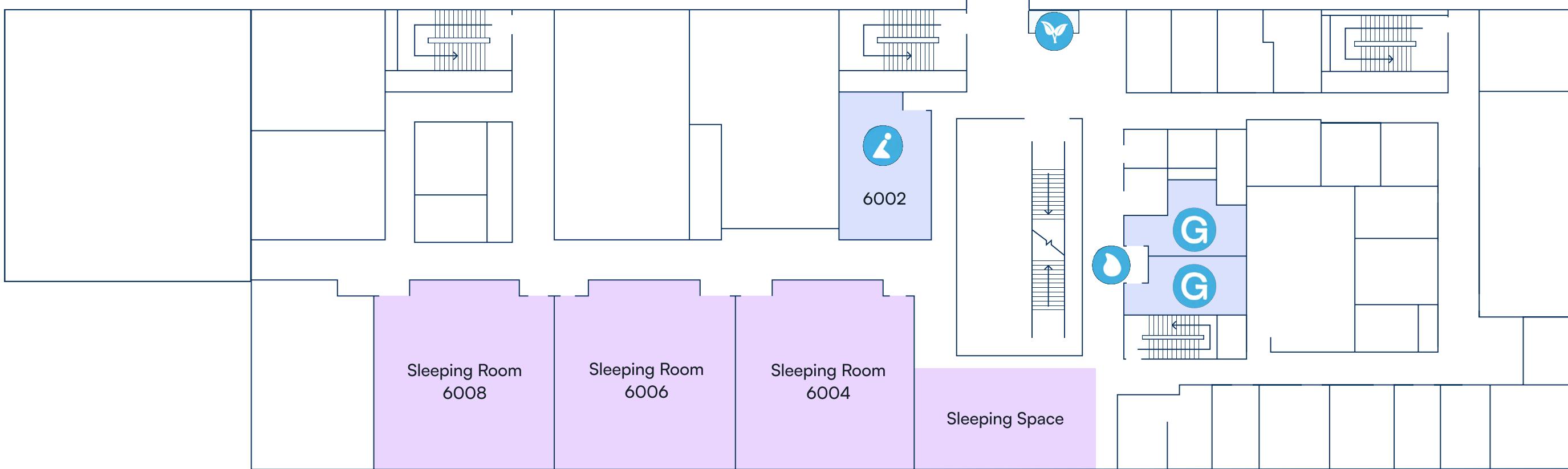
Compost

**E5 + E7 Floor 5**  
Passes Lab

## Engineering 7



## Engineering 5



Elevator



Female Washroom



Male Washroom



Water Bottle Filling Station

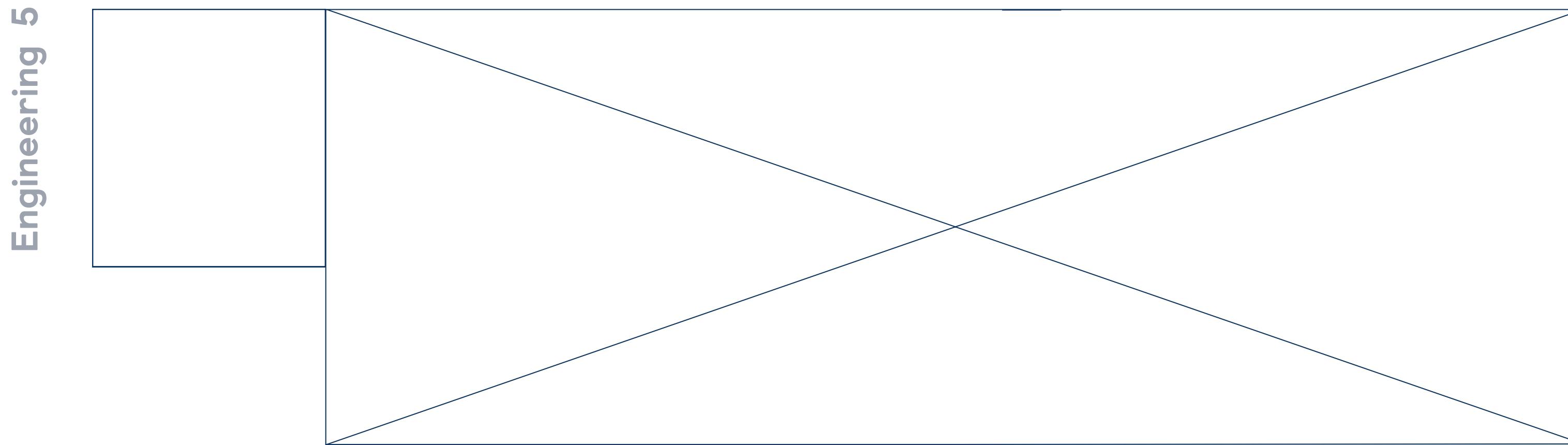
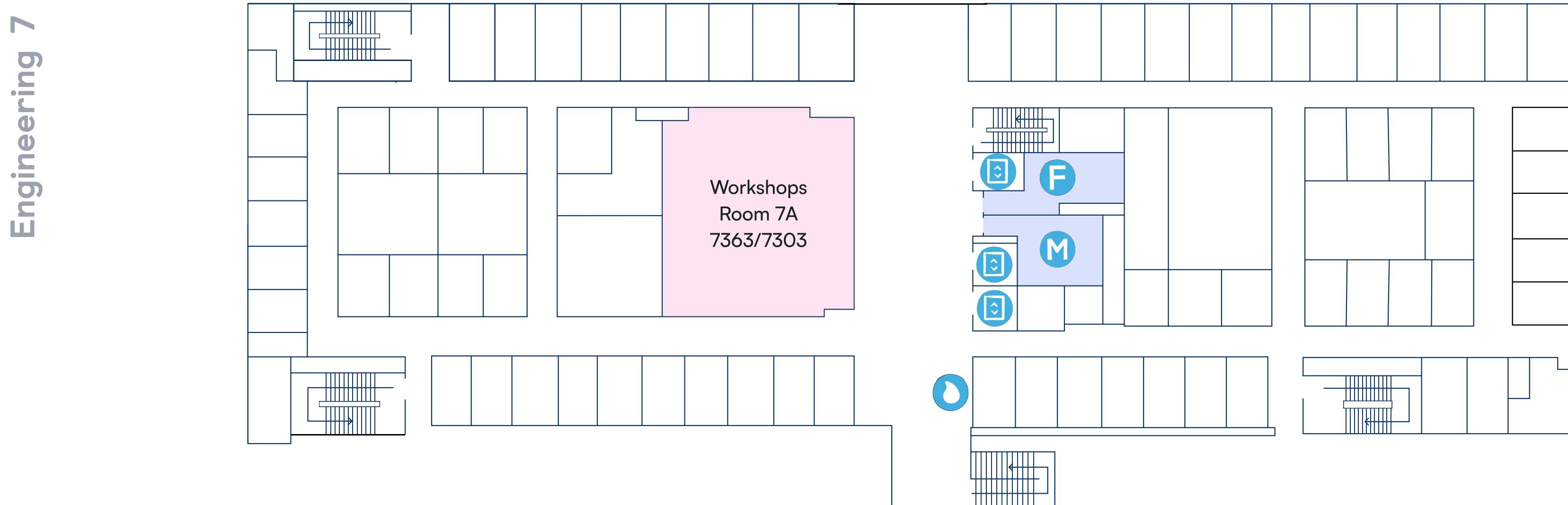


Gender Neutral Washroom



Compost

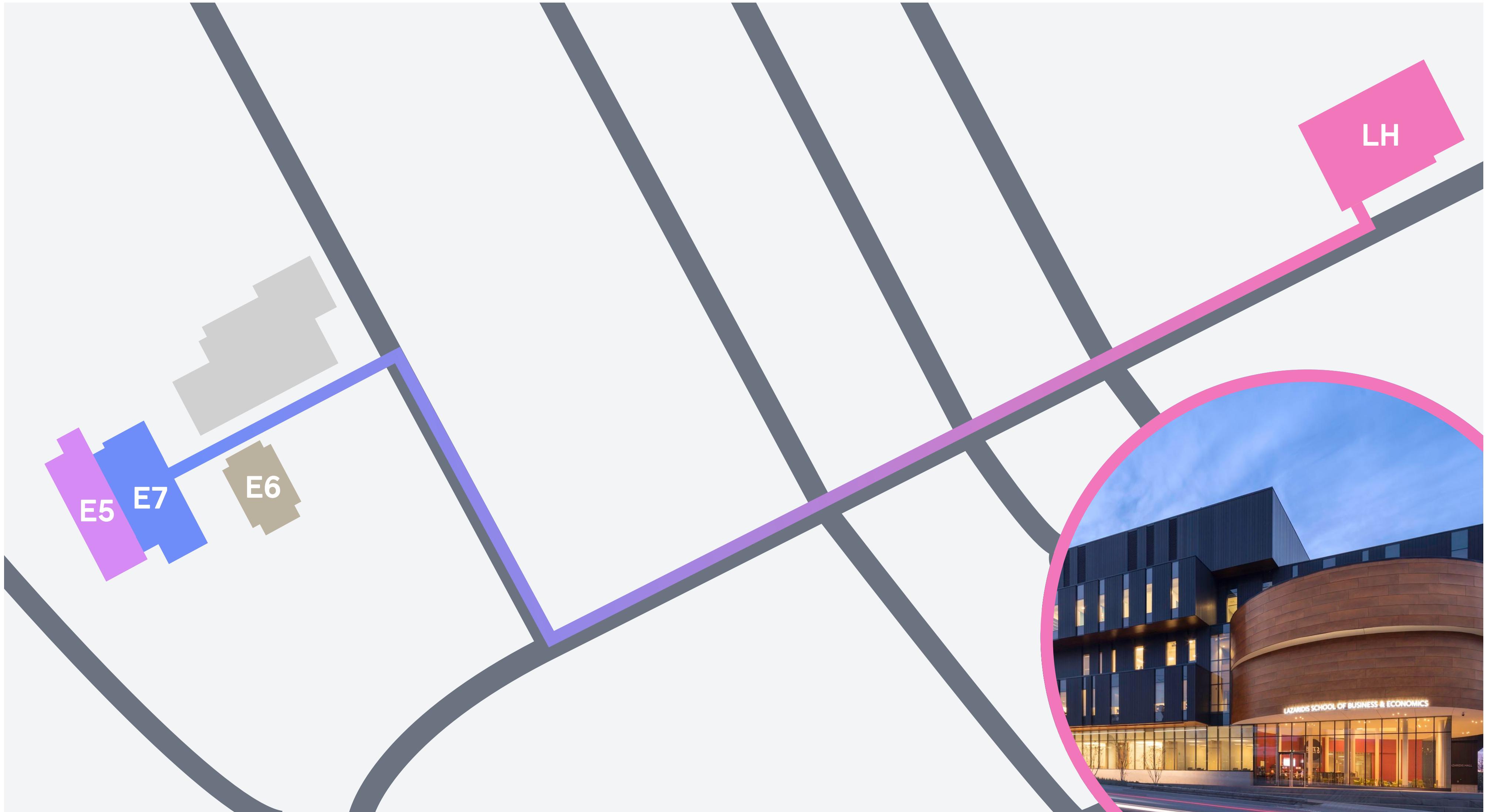
# E5 + E7 Floor 6



**E7 Floor 7**

# Route

## E7 to Opening and Closing Ceremonies



**E5** Engineering 5

**E7** Engineering 7

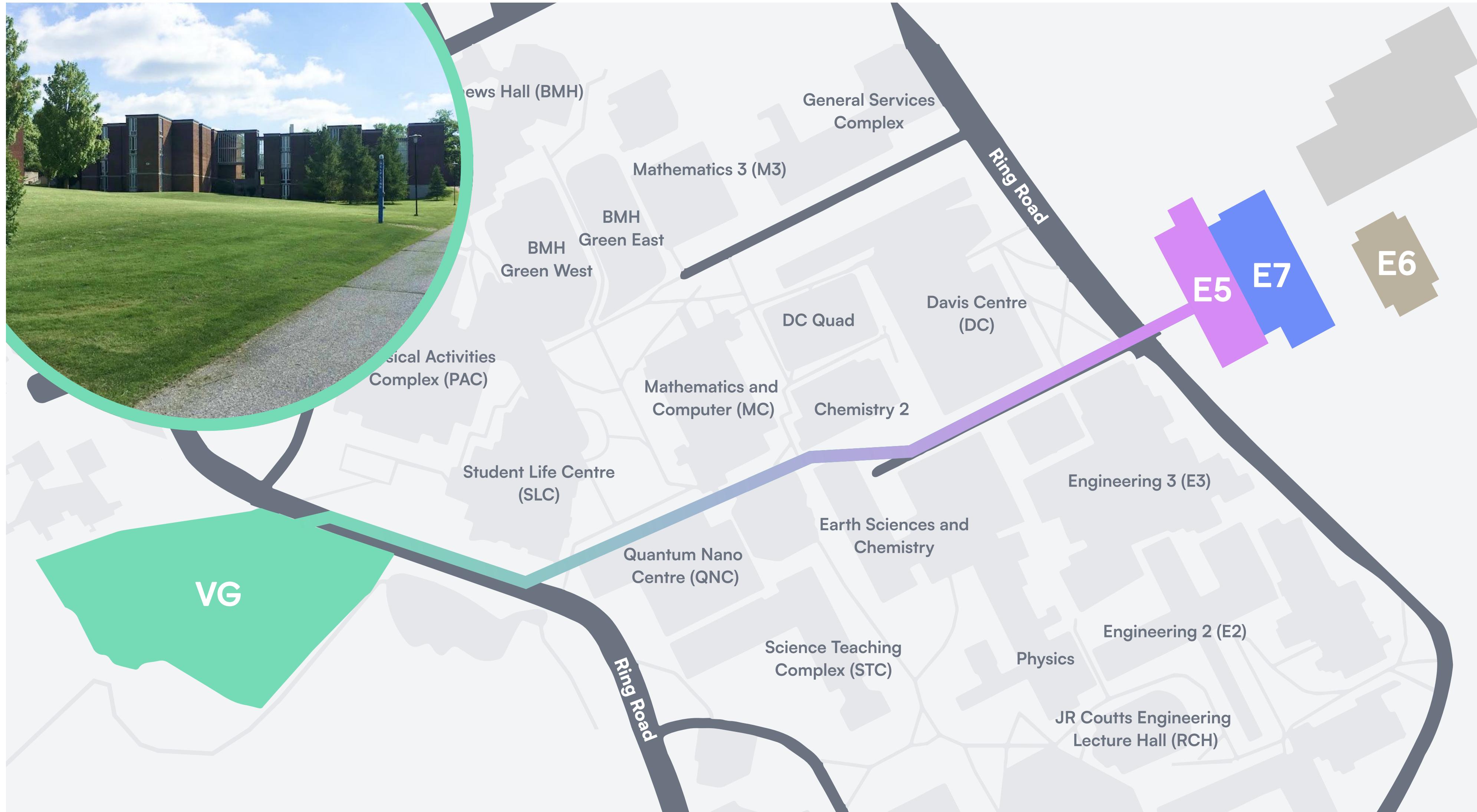
**E6** Engineering 6

**LH** Lazaridis Hall

**Route to Ceremonies**

# Route

## E5 to V1 Green



**E5** Engineering 5

**E7** Engineering 7

**E6** Engineering 6

**VG** V1 Green

**Route to Bubble Soccer**

