



2020 Design Challenge Software

Resource are provided for the following at no cost to the teams:

1. Building Science Training
2. REM/Rate
3. Ekotrope
4. OpenStudio
5. RSMMeans
6. TRACE 3D Plus

Building Science Training

All student team members must complete the Building Science Training, which is available online at no cost and broken into multiple topics. This training is provided to help all teams strengthen their projects.

The on-demand training is provided in approximately 1-hour lessons organized by topic and should take approximately 10+ hours to complete. To successfully complete the course, each student must pass a short quiz for each of lessons 1-10. The special lessons are optional.

To access the required building science training, students' must be registered with a team on the Project Site. Each team member will receive an email notification after registering stating that an account has been created for you and asking you to click on a link to set your password. Depending on when you receive the email, it may be sent from learnbuildingscience.com or thinkific.com. Either one should work the same. Please check the email account that you provided the organizers.

Once you confirm a password, the site will take you to your enrolled courses page, which will have the Solar Decathlon course on it. You will be able to access the course immediately and do not need to re-enroll.

As you complete each lesson, be sure to click "next" to get to the next course component. This will ensure that lessons are properly marked as complete.

Any technical questions or difficulties can be directed to live@buildingscience.com.

Please ensure that you have received the email and registered by February 5, 2020 and then the building science training must be completed by February 18, 2020. Students who complete the training will be issued a completion certificate. The training videos will be available for review through the competition weekend.



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If building science is part of the core curriculum of your collegiate institution's courses, your faculty lead may waive the requirement with confirmation of equivalency for courses the student has successfully completed. This is completed via your team roster.

REM/Rate Software Registration for Residential Energy Modeling

NORESCO has graciously provided REM/Rate simulation software for the Solar Decathlon.* The program starts off with a 90-day trial mode. The trial mode has all the features of a registered version of REM/Rate™, except that none of the reports can be printed. After 90 days, the program needs to be registered with the following User ID and Password in step #3.

To download the REM/Rate software, following these steps.

1. Go to <http://www.remrate.com/home/license>.
2. After opening the program, you will be prompted to enter registration information. The following user ID and registration password are case sensitive. Copy and paste from this document directly into the REM/Rate registration screen.
User ID: Rvqz5G
Password: K88Jed
3. After registration, you will see a reminder that you need to pay a registration per use fee. Teams do not need to pay this cost.

If you have technical questions, please e-mail support@remrate.com or call at (303) 459-7504.

Thank you to NORESCO for their support of the Solar Decathlon!

*REM/Rate™ Intellectual Property & Terms of Use: The software remains the intellectual property of NORESCO. Members of participating teams may download, install and register REM/rate software. Software registration information shall not be distributed to other parties.

Ekotrope for Residential Energy Modeling

For raters and providers, Ekotrope RATER is a cloud-based HERS rating software that delivers energy ratings faster and easier.

Ekotrope is happy to offer free licenses for any teams wishing to use Ekotrope for completing their HERS Rating. For a team to acquire an Ekotrope license, please complete the following:



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- Email support@ekotrope.com with the subject line: "Ekotrope Access for the Solar Decathlon Design Challenge"
- In the body of the email include:
 - Team Name
 - Name and email of each person needing access to Ekotrope. Please designate who the mentor is if they will also be given Ekotrope access.

Ekotrope will create accounts that run through the end of the challenge. The email to new users with account credentials will include information about how to access our help documentation and will include language guiding your team to seek primary assistance from your mentor before contacting the support line.

OpenStudio for Commercial Energy Modeling

For the commercial design division, teams will use [NREL OpenStudio](#), which is an energy simulation software used to model complexities of integrating daylighting, lighting, and heating and cooling equipment often found in commercial buildings. OpenStudio is free to download; while a useful tool, using it is not required. Instructions and templates can be downloaded for the [Elementary School Division](#) and [Office Building Division](#).

RSMeans for Financial Analysis

Per the [2020 Design Challenge Rules](#), Design Challenge teams are expected to complete a financial analysis and provide explanations for numbers entered in the project. Thanks to Gordian's sponsorship, students have the opportunity to use the RSMeans costing database at no cost.

Each Solar Decathlon team is allocated 1 license which is tied to a single email address, so please carefully select one user within the team to obtain the license. Email SDdesign@nrel.gov with your collegiate institution, team name (as listed on the Project Site), and contact information for who should receive the license. Also, check out their [on-demand and weekly live webinars](#) for training on the software.

A complete financial analysis is not required until the Design Challenge *Project Report*.

Questions on the RSMeans tool can be directed to RSMeans Customer Support at the main number 800-448-8182.



If you have any questions on the tool within the competition, please send an email to SDdesign@nrel.gov.

TRACE 3D Plus

TRACE 3D Plus is a next generation building design and analysis software program that delivers fast, accurate results through a seamless workflow that closely aligns with today's building process. The latest HVAC systems and controls can be modeled quickly, precisely and with the intricacies of today's many building applications. TRACE 3D Plus is built on the U.S. Department of Energy's EnergyPlus engine and enhanced with Trane's industry leading expertise to help designers validate and interpret projects with confidence and clarity.

[Ingersoll Rand/Trane](#) are offering a limited number of licenses/seats for you to utilize TRACE 3D Plus during your design process. To sign up for use, please submit an [order form](#) via email to [cgsadmin@trane.com](mailto:cdsadmin@trane.com), using the Promotional Code **SDDesign20**.