Tarbut V’Torah (TVT) is a private K-12 school in Irvine, California. The school has a clear goal of becoming a premier educational destination. In its pursuit, TVT embarked on an effort to revamp and strengthen its curriculum to reflect 21st century learning concepts and provide programs geared towards science, engineering and arts, as well as spaces that support the whole child. The project results are spaces that foment critical thinking, creativity and interdisciplinary collaboration in the Maker building; and spaces that support a balanced lifestyle in the Fitness building. Both buildings together total 9,360 square feet and are strategically located to complement the existing k-5 courtyard configuration, while reimagining previously underutilized outdoor areas into purposeful learning and social environments.

Since the buildings’ opening in 2017, the school has flourished with 120 students gained. In 2018, Kindergarten started with its largest enrollment in the school’s history. An enrollment increase of over 5% is expected for the 2019-20 school year. After its most recent accreditation visit, TVT’s efforts to achieve academic excellence were validated by receiving the maximum accreditation length of seven years.

The new facilities have been so well received that the curriculum offerings have been revised to include more time in these spaces for k-5 grades. Successful afterschool programs have been created including k-2 club invention and grades 3-5 robotics league.

“Our Lower School spaces are functioning as social-emotional learning laboratories as much as science classrooms and makerspaces.” – Jon Cassie, Instructor
scope of work & budget

59,027 SF modernization
9,360 SF addition Maker & Fitness
21.5 Acre Site
2 Story Campus
850 Students (K-12)
$20M Construction Budget

% reduction of irrigation over baseline, greywater is used

Maker Bldg.
1. think tank
2. huddle
3. building support
4. maker lab
5. science lab
6. prep room

Fitness Bldg.
1. dance/ yoga studio
2. weight room
3. training room
4. office

Site
1. slides
2. new entry
3. arts courtyard
4. outdoor classroom
5. lions way
6. biofiltration zone
7. educational time line
8. CNC Farm Bot
school & community engagement

The school community is an inclusive, pluralistic community with students from 115 different feeder schools and 33 different cities/communities within Orange County.

A steering committee that included school leadership from the board, the head of school, upper and lower school principals and many educators began by taking a step back from discussing spatial needs and looking at educational visioning... not just how to supplement what they were already doing, but how to grow their school culture to become even greater than before.

Tradition is important to many schools, especially those with a rich cultural history to pass down to future generations. The challenge for these educators was to honor their cultural traditions while breaking away from a more traditional model of education, to being more collaborative and personalizing learning for every student. In order to achieve their goal of personalized learning, teachers realized that their space should be activity driven, rather than teacher-driven.
The design team was engaged early to codevelop a program that responds to TVT’s goals. The planning process involved over 50 student, teacher, administration, and community representatives throughout the development. This led to an exploration process to create future ready learning environments that support the whole-student.
**Jewish values**
TvT believes that “joyful learning today leads to meaningful achievements tomorrow” and the goal is to provide personalized education to each child, encouraging strong teacher-student relationships and emphasizing character attributes and service to the community as part of their values:

- **Truth (Emmet)**
- **Respect (Kavod)**
- **Kindness (Chesed)**
- **Repair the World (Tikkun Olam)**
- **Justice (Tzedek)**
- **Community (Klal Israel)**

**Project-based learning**
Project-based learning is integrated into all levels at TvT – beginning in first grade and continuing through service learning projects and Afterschool Innovation programs that provide specialized areas of focus for interested students in subjects like AI, robotics, biomedical engineering, and interactive arts.

The new Innovation Center supports all of these programs, and is flexible to allow for new focused programs to emerge and evolve over time.
To encourage more interdisciplinary collaboration, the new STEAM/MAKER building, named the "Innovation Center," is sited next to the existing Art room and MPR, with an operable wall to expand learning space outside.

An Arts courtyard was created to connect the two spaces and provide places for project display and group discussion.
A "Huddle" room is provided adjacent to all three lab spaces, providing a more acoustically-absorptive environment appropriately scaled for small group discussions or brainstorming. The curvilinear shape encourages out-of-the-box thinking and a positive group dynamic.

**physical environment**

<table>
<thead>
<tr>
<th>1</th>
<th>breakout</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>huddle area</td>
</tr>
<tr>
<td>3</td>
<td>imagination station</td>
</tr>
<tr>
<td>4</td>
<td>science/STEAM lab</td>
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<tr>
<td>5</td>
<td>storage/ workroom</td>
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<td>6</td>
<td>building support</td>
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</tbody>
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The maker and STEM lab spaces were designed to support an evolving curriculum and messy project-based creative explorations: including polished concrete floors with overhead utilities and furniture that supports a variety of activity, along with ample visible storage of materials and finished work.
The architecture is open to allow for systems and utilities to be used as a teaching tool, with acoustical deck, tubular daylighting harvesters, a low velocity fan, and energy-efficient lighting. As much storage as possible is provided, with open shelving to spark ideas and curiosity. The height is scaled down through the use of color and the space comes to life through its occupants and work produced. For attention restoration, ample outdoor access and glazing provides views to the exterior, along with additional work space and operable windows for fresh air.
The new Fitness and Weight rooms provide additional resources for health and wellness, along with a sense of ownership and identity for upper school students who previously only had the shared gymnasium with lower school.
A green roof over the new fitness building blends it into the slope which separates the lower school from the upper school. The slides offer a quick way to get from upper to lower campus. The backside of the gymnasium building, formerly empty handball courts, are now additional storage space and large-scale graphics activate the main student entry.
**SUSTAINABILITY**

1. Energy Efficiency - the project’s EUI of 43, is 70% better than baseline meeting the 2030 Challenge
2. Air - 100% of occupied spaces have mixed mode ventilation with operable windows leveraging prevailing breezes. Energy models predict that a 5-7% energy improvement is possible.
3. Artificial lighting - daylighting strategies helped reduce interior lighting power density to 0.7 w/sf, 30% better than code
4. Materials - interior finishes reduced to allow building itself to function as an education tool

**WELLNESS**

A. Thermal comfort - Operable windows and large fans accessible to students and faculty for operation
B. Daylighting - 75% of regularly occupied areas achieve at least 300 lux for over half the annual occupied hours.
C. Biophilia - 90% of occupied spaces have direct and meaningful views to the outdoors
D. Acoustics - variety of spaces provided with range of acoustical character to fit multiple activities
The birth of the Israeli Discovery Playground transformed what was once an outdated, cookie-cutter playground with excessive hardscape into a series of diverse spaces designed to be both learning space and play zone. These spaces include an art room with outdoor sink and 18’ long family-style concrete table, a market stall along the tricycle path, an amphitheater for large group gathering, an interactive creek bed with water pump, growing gardens, and child-sized reading huts that can transform into Sukkots during religious festivals.
During the Feast of Booths holiday, the Reading Pods are converted into sukkot when the children weave them with palm fronds, allowing for both traditional instruction and religious celebration to occur in one space.

Sitting amongst the landscape is an outdoor classroom with a writable wall surface, boulders for seating and a large sycamore tree for shade. The chalkboard, set low for accessibility to the young students, is used both as a teaching tool and a play surface.
INTEGRATION / educational opportunities

1. Entry w/ integrated school values
2. Visible strategies for daylighting - 100% of occupied spaces
3. Restored ecology / demonstration green roof
4. Rain well
5. Biofiltration for 100% of stormwater w/ educational signage
6. Educational time line
results of the process & project

After the completed playground project, renovations of the academic spaces, and the maker and fitness addition, school enrollment has increased with the largest ever Kindergarten class starting this year. An enrollment increase of over 5% is expected for the 2019-20 school year.

Parents, students, and teachers can be found using the playground and garden after hours. The innovation center is home to many afterschool programs, and often opened up to the outdoor courtyard.

The spaces exemplify the school’s values and are homes of JOYFUL LEARNING.