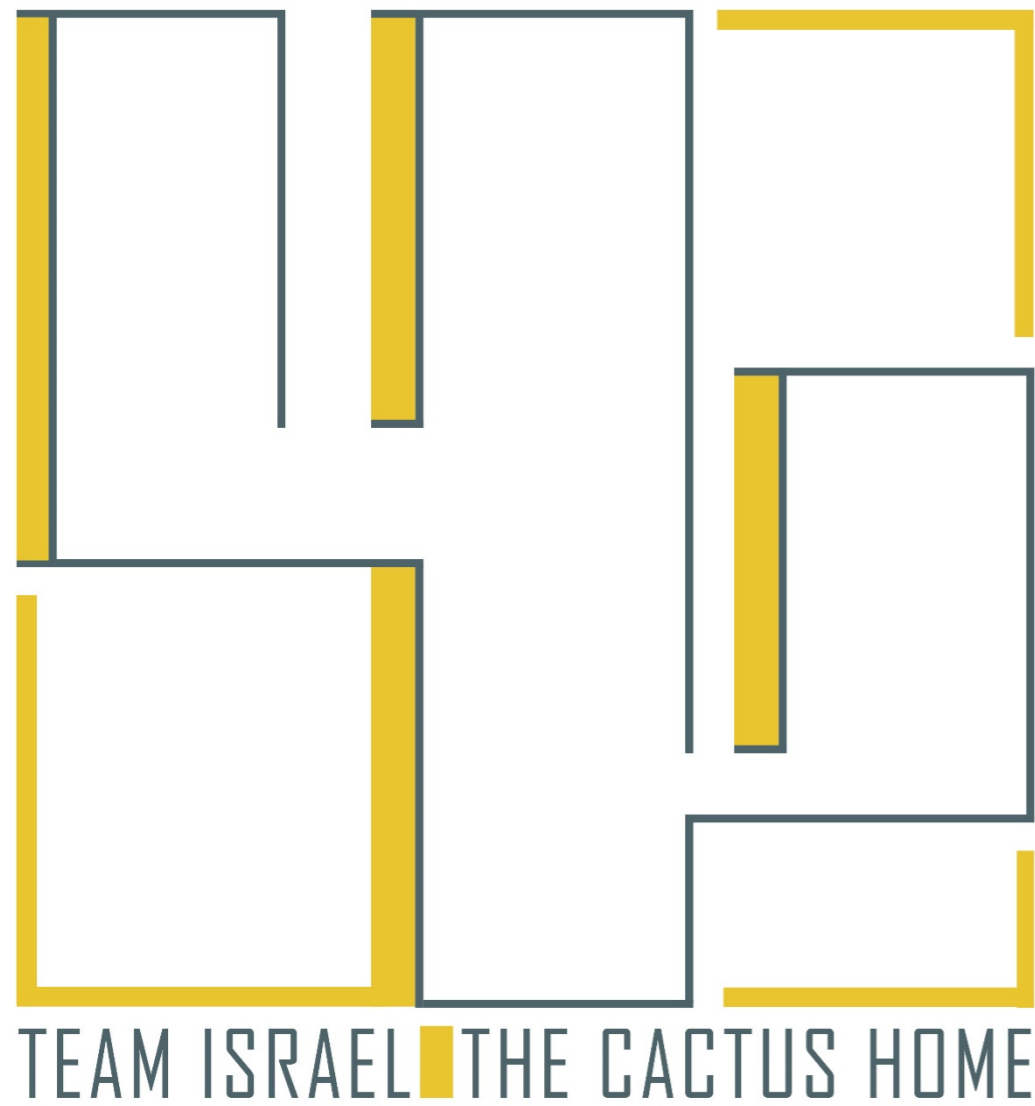


SOLAR DECATHLON China 2017



SOLAR DECATHLON CHINA 2013 – TEAM ISRAEL

4th Place









Four Academic
Institutions

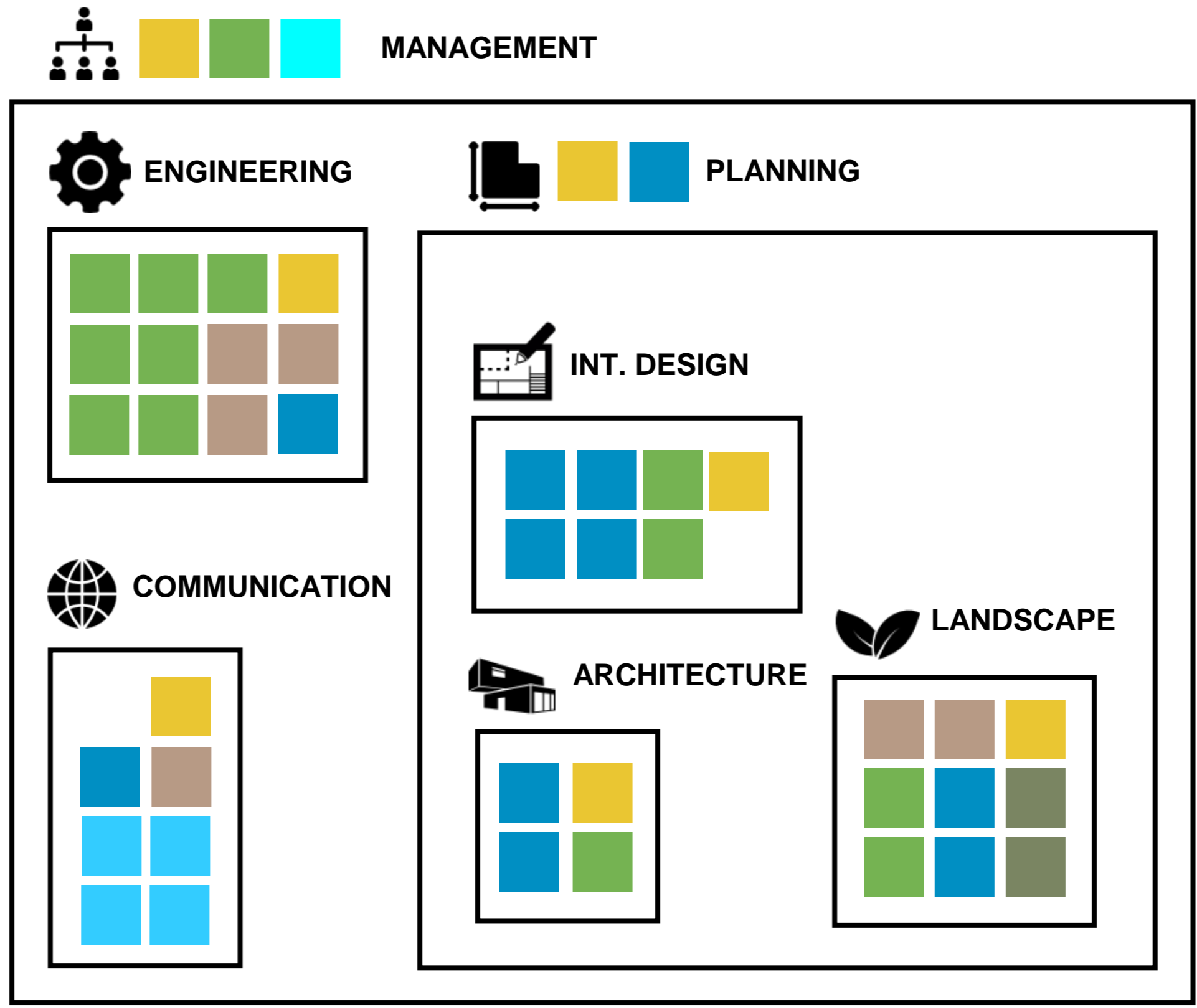
Most
Sponsored
Team



<http://www.israel-sd2013.com/>

<http://www.israel-sd2013.com/home/the-sponsors/suppliers?lang=en>

-  **COMAS Interior Design**
-  **COMAS Communications**
-  **COMAS Economics**
-  **AFEKA Engineering**
-  **HUJI Agriculture**
-  **TEAM LEADERS**
-  **Faculty & Pro. Advisors**
-  **Teams' Groups**



Dear Team Israel,

Congratulations! The Organizing Committee of Solar Decathlon China is delighted to inform that Team Israel has been officially selected to enter the Solar Decathlon China 2017 competition.

Composed of College of Management Academic Studies and Afeka College, Team Israel has dedicated substantial effort and support towards the international competition of Solar Decathlon China. The team proposal shows full understanding of the competition requirements and demonstrates a good likelihood of success in delivering a competing house.

OCSDC hopes you the best in the performance of the competition.

Best regards,

Organizing Committee, Solar Decathlon China



22 Teams from 12 countries and 52 educational institutions.

Project Renewal - about 100 villages / 10,000 units.

Long term demonstration - exposure expected to 3,000,000 visitors.

Planning a real, permanent, two story house.

TEAM

ISRAEL

2017

Dr. Moshe Tshuva- Engineering & Innovation

Arch. Heidi Arad- Planning & Design

Hadas Pe'er- Management, Funds & Administrations

Galia Cuckerman- Agriculture & Food Source

<http://sdisrael2017.wixsite.com/cactushome>

<https://www.facebook.com/cactushomegreenlife/>

ID	中文	English	ID	中文	English	
1	西安交通大学	Xi'an Jiaotong University	12	湖南大学	Hunan University	
	西新英格兰大学	Western New England University (WNE)	13	西安建筑科技大学	Xi'an University of Architecture and Technology	
2	东南大学	Southeast University	14	北京交通大学	Beijing Jiaotong University	
	布伦瑞克工业大学	Technical University of Braunschweig	15	上海工程技术大学	Shanghai University Of Engineering Science	
3	华南理工大学	South China University of Technology	16	山东大学	Shandong University	
	都灵理工大学	Politecnico Di Torino		雷恩国立应用科学学院	National Institute of Applied Sciences of Rennes (Institut National des Sciences Appliquées de Rennes)	
4	上海交通大学	Shanghai Jiaotong University		雷恩第一大学高级工程师学院	University of Rennes 1 / Superior School of Engineer of Rennes (Université de Rennes 1 / Ecole Supérieure d'Ingénieur de Rennes)	
	伊利诺伊大学厄巴纳-香槟分校	University of Illinois at Urbana-Champaign		雷恩第二大学城市规划与管理学院	University of Rennes 2 / Institut of Aménagement and Urbanism of Rennes (Université de Rennes 2 / Institut d' Aménagement et d'Urbanisme de Rennes)	
5	多伦多大学	University of Toronto		雷恩约里奥-居里高等学校	High School Joliot Curie of Rennes (Lycée Joliot Curie de Rennes)	
	辛尼加学院	Seneca College		雷恩技术大学	Technical School of Compagnons du Devoir of Rennes (Compagnons du Devoir de Rennes)	
	瑞尔森大学	Ryerson University		布里塔尼国立建筑学院	National School of Architecture of Brittany (Ecole Nationale Supérieure d'Architecture de Bretagne)	
6	清华大学	Tsinghua University		厦门大学	Xiamen University	
7	印度理工学院	Indian Institute of Technology Bombay		麦吉尔大学	McGill University	
8	以色列学术管理研究学院	COMAS (Collage of Management Academic Studies)		肯高迪亚大学	Concordia University	
	阿夫卡学院	Afeka College		伊斯坦布尔技术大学	Istanbul Technical University	
9	新泽西理工学院	New Jersey Institue of Technology		伊斯坦布尔文化大学	Istanbul Kültür University	
	福建工程学院	Fujian University of Technology		玉勒图兹技术大学	Yildiz Technical University	
10	同济大学	Tongji University		19	沈阳工程学院	Shenyang Institute Of Engineering
	德国达姆施塔特工业大学	Technical University Darmstadt		20	香港大学	The University of Hong Kong
11	首尔大学	Seoul National University		21	山东烟台大学	Yantai University
	成均馆大学	Sungkyunkwan University	22	伊利诺伊理工学院	Illinois Institute of Technology	
	亚洲大学	AJOU University		宁波诺丁汉大学	University of Nottingham, Ningbo, China	



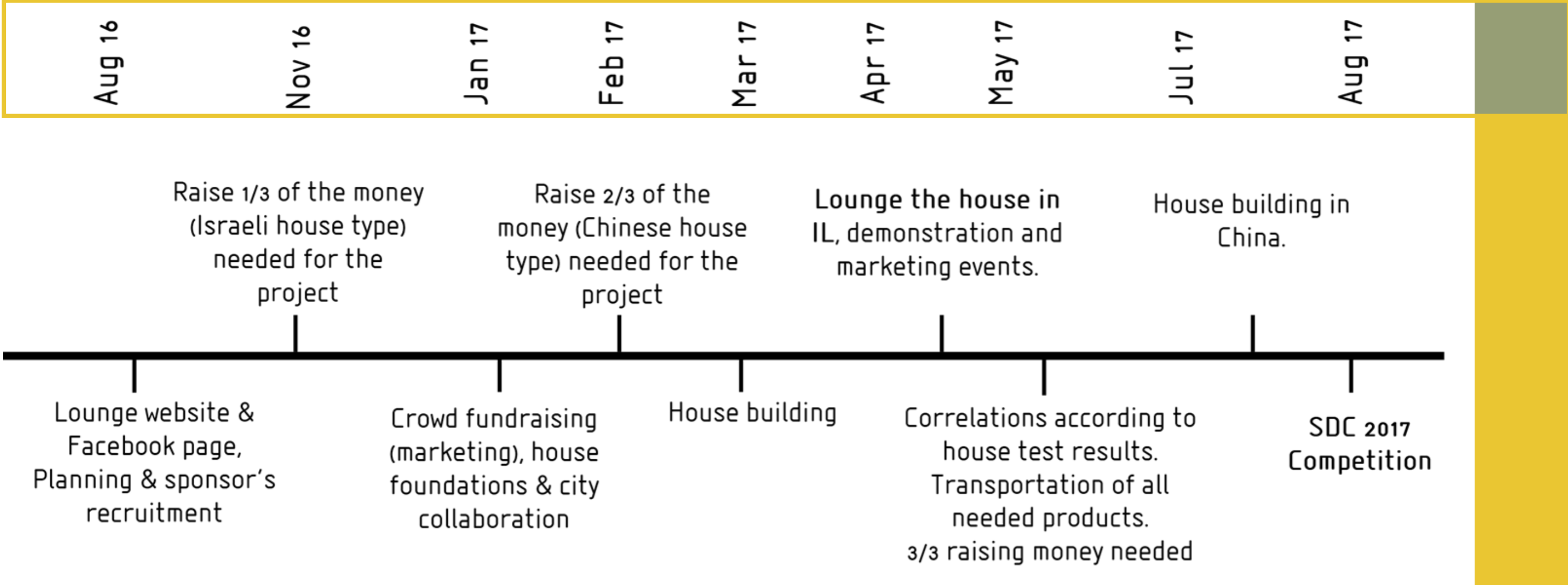
<http://sdchina.org.cn/English/sdchina2017>

TEAM ISRAEL GOALS

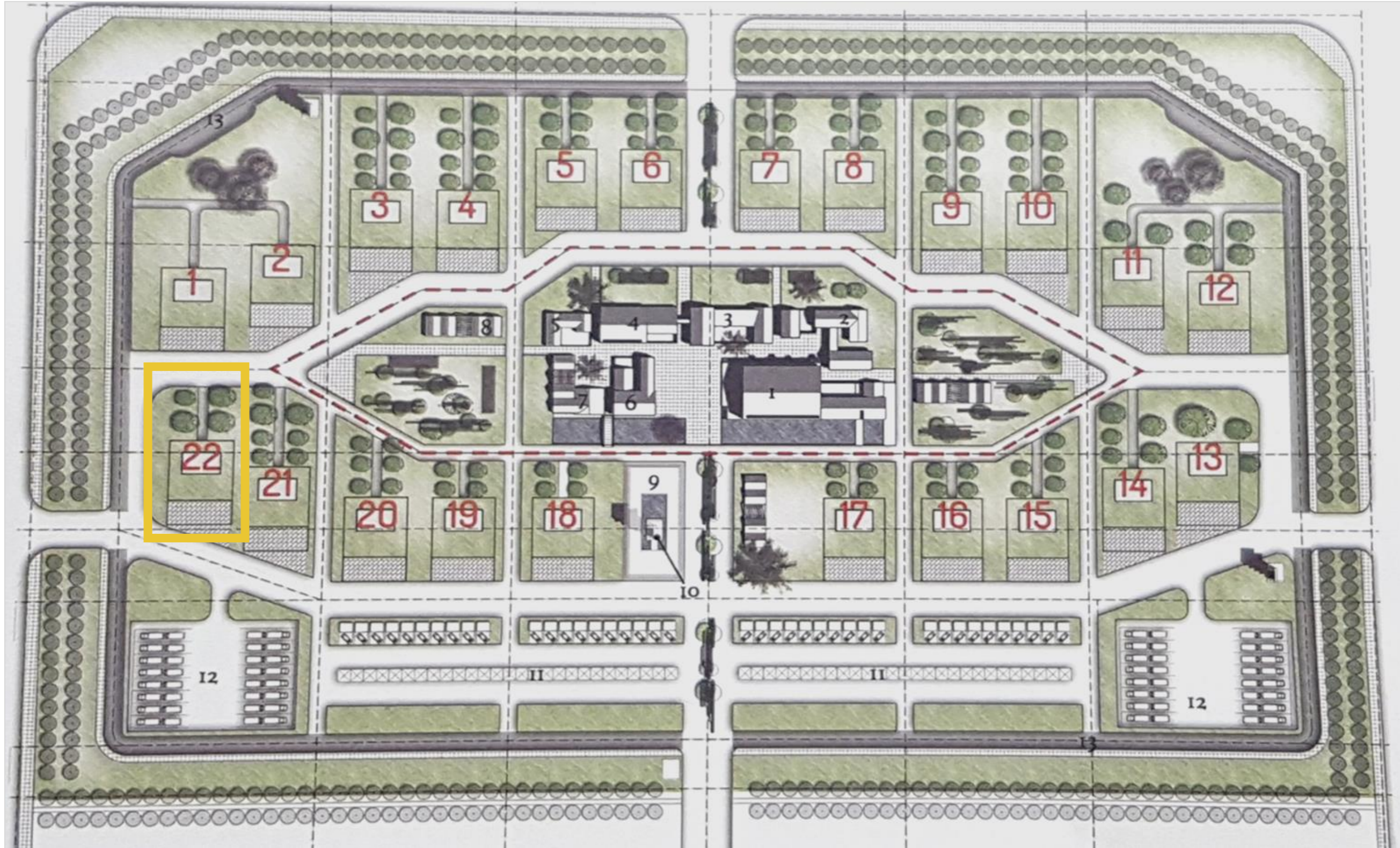
Project Renewal building in China a house unit out of a planned neighborhood/ rural renovated villages concept, that will showcase the teams' ideas for positive energy, co-housing & affordable building. Motivated to demonstrate participant companies for three months after the competition. **/// August 2017**

Planning a real, permanent, two stories house each house is planned to be built according to the climate area, culture and needs of its market target. The two versions can demonstrate that with minor changes it is possible to build a positive energy, co-housing & affordable building almost anywhere. **///January 2017**

Long term demonstration building in Israel a house unit out of a planned building/ neighborhood/ smart city concept, that will showcase the teams' ideas for positive energy, co-housing & affordable building. Hopefully to become a demonstration center for Israeli green-tech products. **/// April 2017**



Construction Site



Construction Site



CACTUS HOUSE – Concept & Strategy

Creation of a cohousing project based on a sharing community, which is inspired by the Israeli "kibbutz" adapted to the Chinese culture and affordability.



Private Public Green Areas

A Typical Structure Of A Kibbutz

CACTUS HOUSE – Concept & Strategy

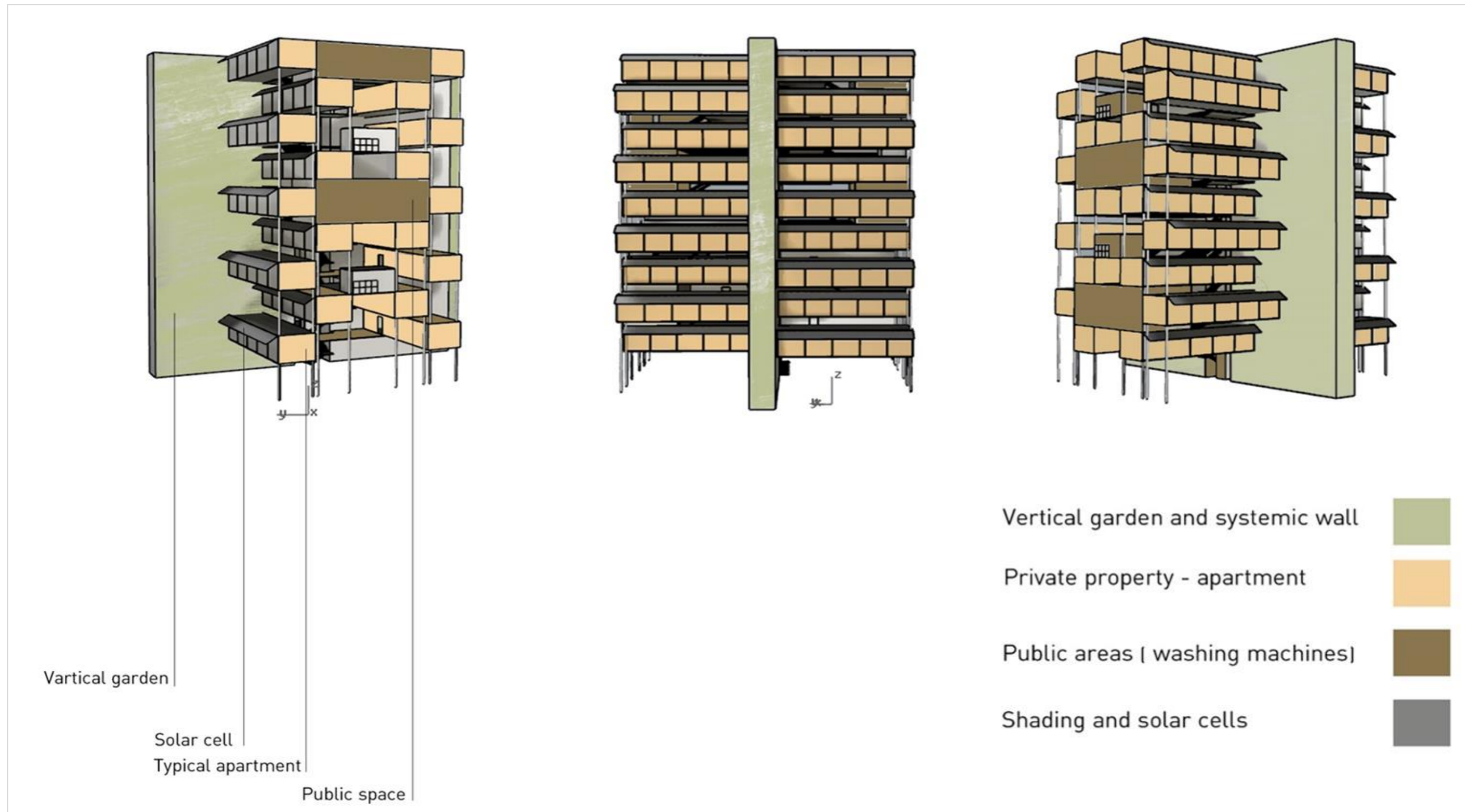
Integration of multiple engineering solutions: Solar energy, HVAC system, grey water recycling, hydroponics, greenhouses, rain collection, data logging and smart home systems. All internal systems are located within the green wall.



Shared spaces between apartments are used for different activities- laundry, work and study space, gym, community space etc.

CACTUS HOUSE – Concept & Strategy

Urban agriculture as part of the total site development.

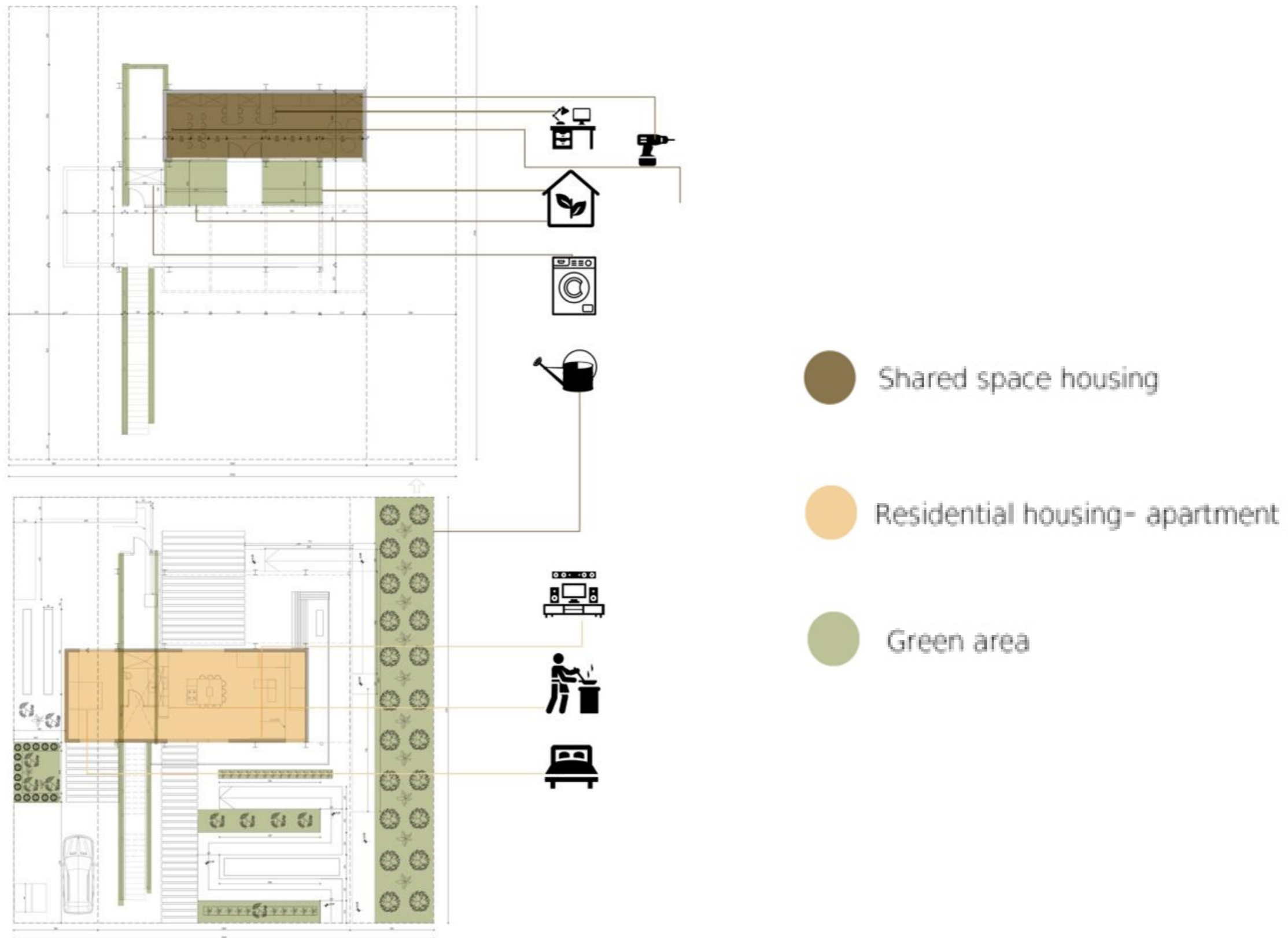


CACTUS HOUSE – Concept & Strategy

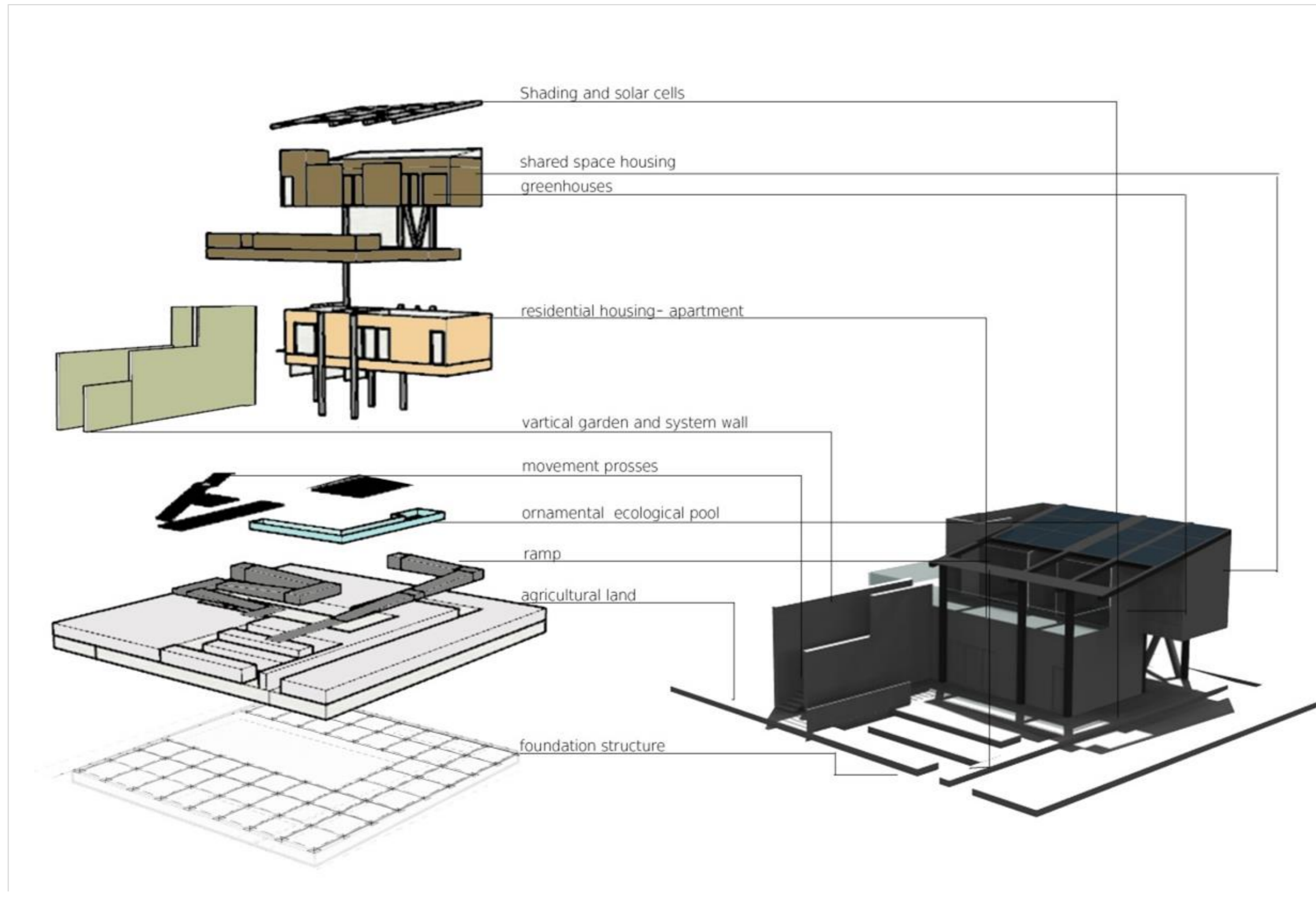
Building a passive residential building of two floors of a total of 170m² on a site of 625 m².



The plan suits a rural family new housing concept for China, as well as a co-housing concept for shared spaces in a private housing building for western communities.



The plan suits a rural family new housing concept for China, as well as a co-housing concept for shared spaces in a private housing building for western communities.



Landscape Plan & Ground Floor

Elderly couple bedroom & shower room,
Shared-family kitchen & living room.
Staircase to the second floor is also the mechanical room of the building, stretched along the house from the front to the back.



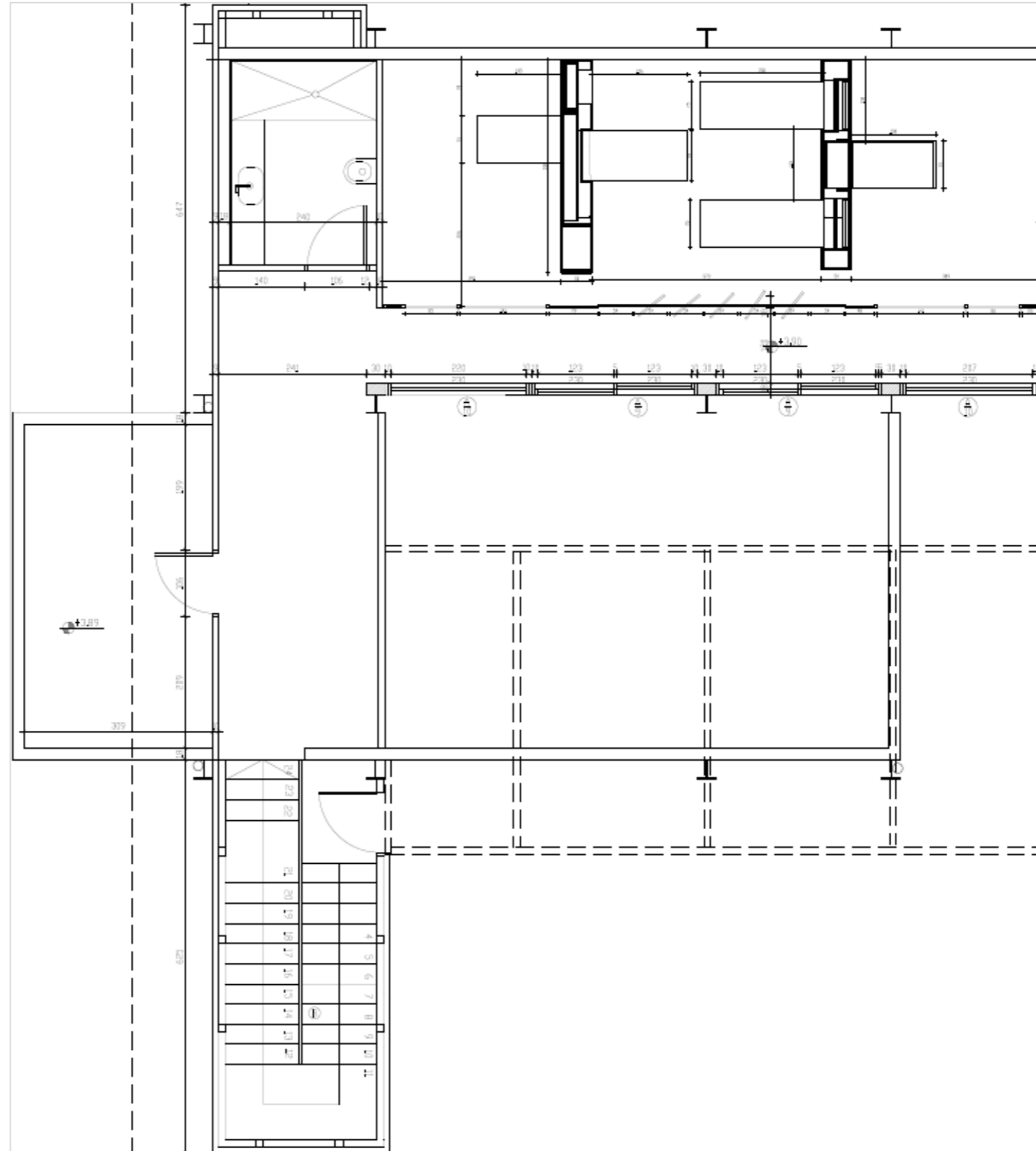
Interior



Second Floor

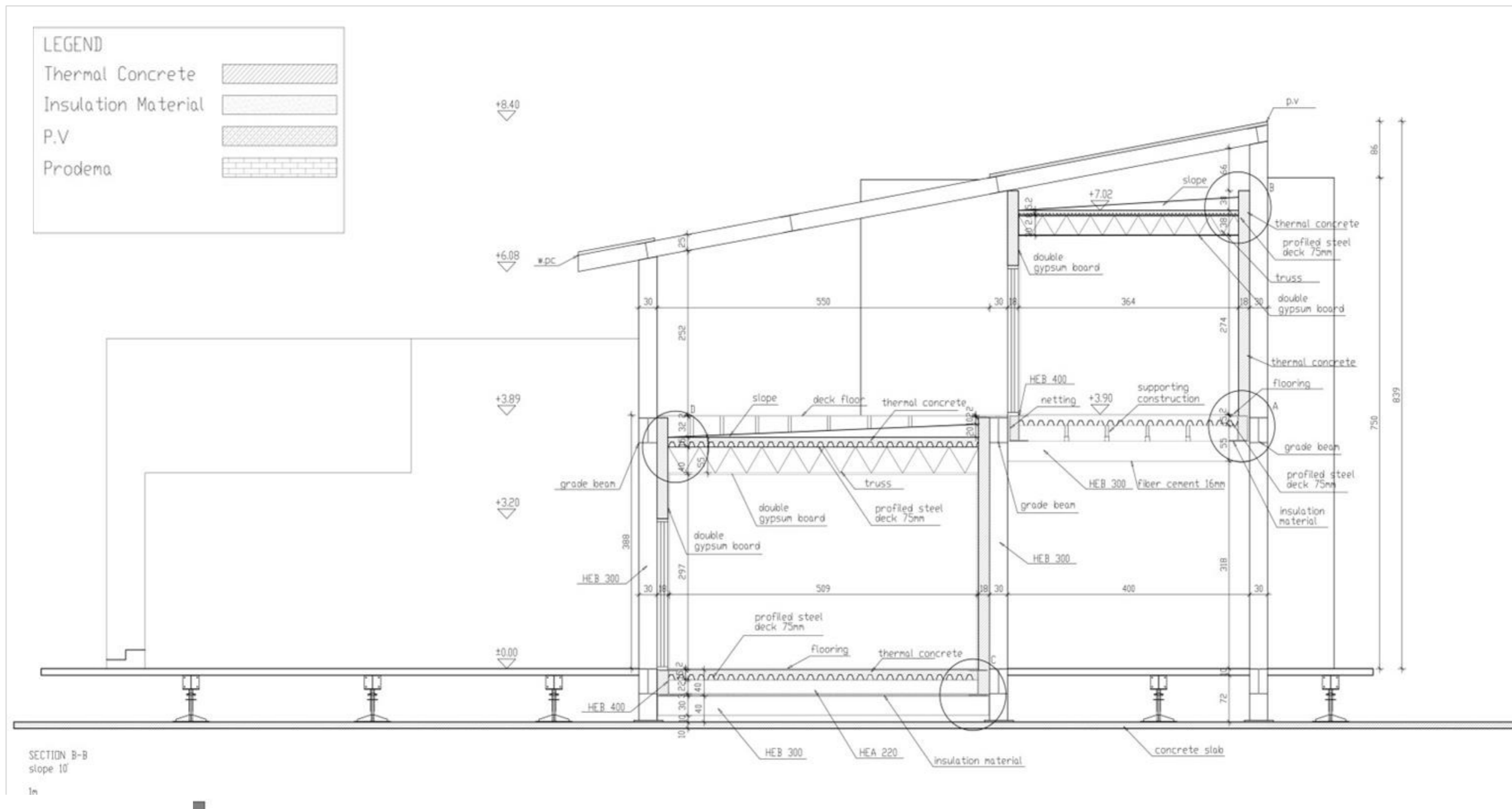
Parents (son of elderly couple)
& their two kids (in rural areas)
Private sleeping rooms can be
Workshop during day hours,
or to rent.

Floor also shares:
Toilet
Laundry room
Germination Greenhouse.



INNOVATION – Construction Methods & Material Selection

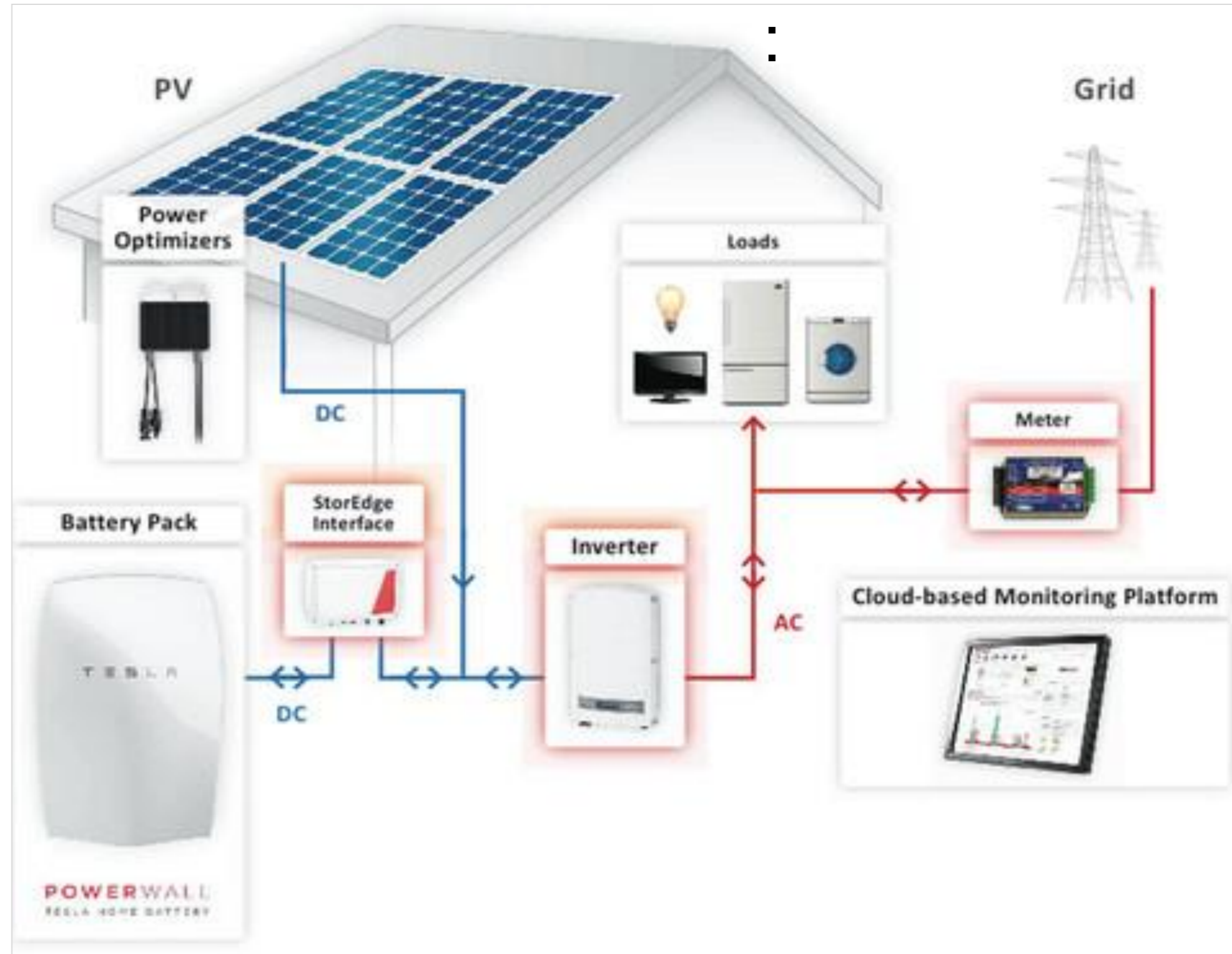
1. Recycling Steel Construction
2. Less Materials
3. Green Materials
4. No Waste
5. Superior Thermal Performance
6. Strength
7. Quality (computerized production)
8. Urban Agriculture
9. Fast Constructing (mechanical production & assembly)
10. Flexable Design
11. Add-Ons Building
12. Durability



INNOVATION – Engineering & Systems

Energy Generation

Power Optimizers
Cleaning Panels
Cooling Panels



INNOVATION – Engineering & Systems

Data logger and Smart Home systems

Cloud Based Data Logging System
App Connection



Smart Home & control

Quantity List

Total Quantities	
Device	Quantity
Lightswitch	14
Ligth Fixtures	22
Plug	45
Temprature Sensor	12
Humidity Sensor	12
Light Sensor	9
Door Sensor	10
Room Energy Meter	10
PIR Sensor	11
Appliance Energy Meter	12
Camera	1
CO2 Meter	11
PM2.5 Meter	11
Smoke Sensor	11
Water Temp Sensor	2
Smart home hub	2

Smart Home & control

Control System



Smart Home & control

Lighting Control



Smart Home & control

Tempratur & humidity



Weather Station



Smart Home & control

Smoke Detectors

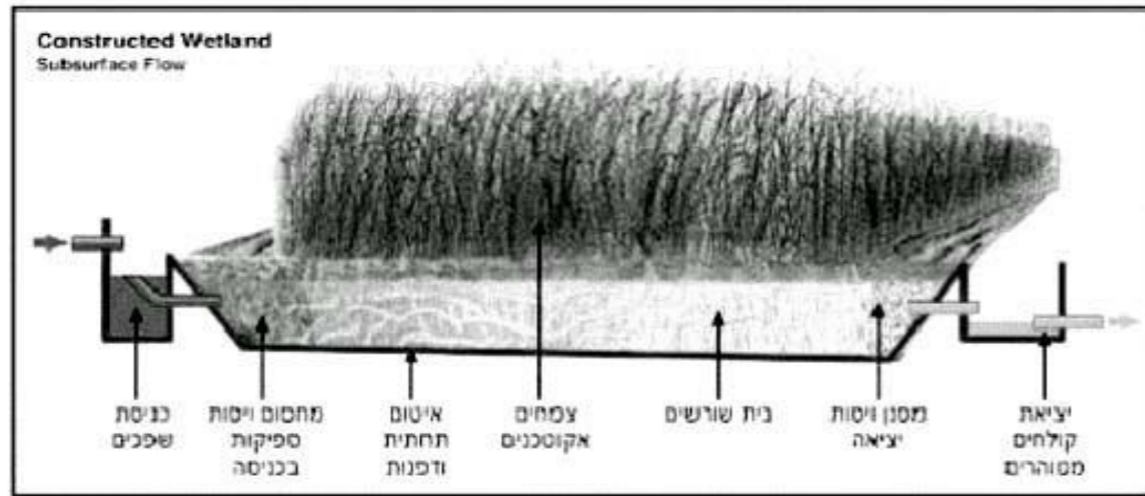


Smart Plugs



INNOVATION – Engineering & Systems

Water and waste recycling Grey Water Recycling



INNOVATION – Engineering & Systems

Water and waste recycling Home Bio-Gas



1 bucket of dinner scraps 2-3 hours of cooking time

INNOVATION – Engineering & Systems



Hydroponics & rain collection

- 1 m² = 30 Plants
- Enough vegetables for
2 people per month
- Grow time – 75% of regular grow time
- 100 Liters of water a month = 0.7 NIS





Advisors

Ervin Schilinger /// Livni Engineers Ltd. /// Vishkin HVAC Systems /// Adi Muggia ///
Mohadi Muadi

Sponsors



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בית הקקטוס: בית חסכוני באנרגיה וידידותי לסביבה

בית הקקטוס הוא בית ירוק, חכם ואינטראקטיבי פרי פיתוח ישראלי המתמודד בתחרות הסולר דקתלון בסין. בואו לעקוב ולתמוך בפרויקט הירוק כחול-לבן



העולם שלט הוא הבית של כולם | צילום: הדמיה

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 זה למשוש משימה עמוקה ולהירגע
 זה לקבל חיבוק ממישהו אהוב

**THANK
YOU**

