



## Towards an Interactive Science Centre in Palestine

The Science Studio: A Contribution to a Sustainable Future  
of Ramallah City

by

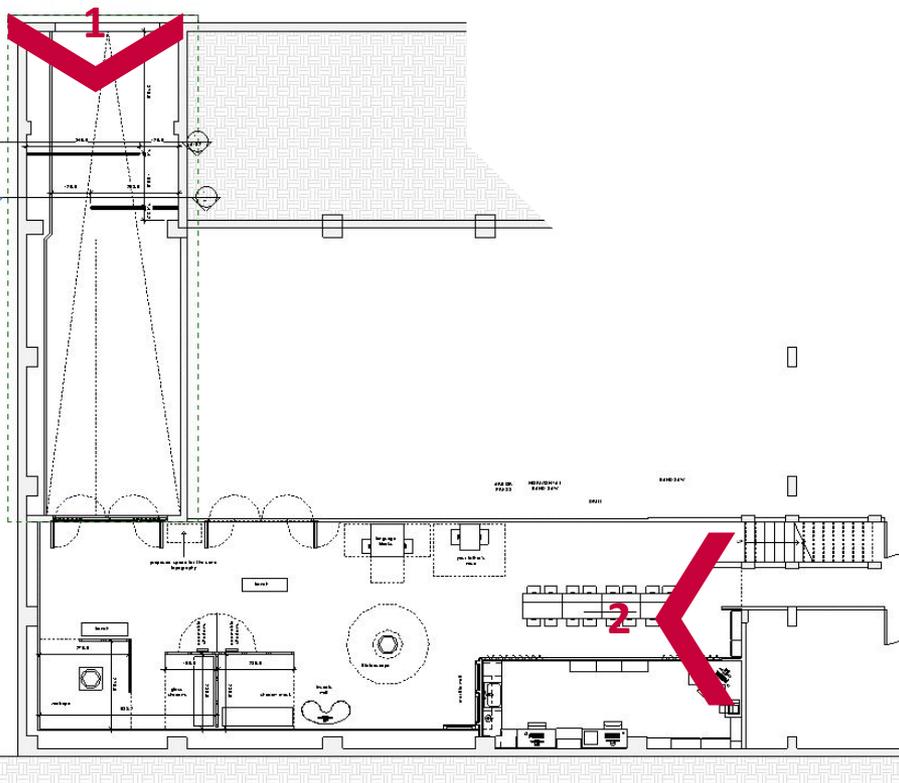
Nader Wahbeh & Hiba Burqan

Science Studio, Educational Research and Development Programme

مؤسسة  
عبد المحسن  
القطان  
A M QATTAN  
FOUNDATION



# Opening Ceremony



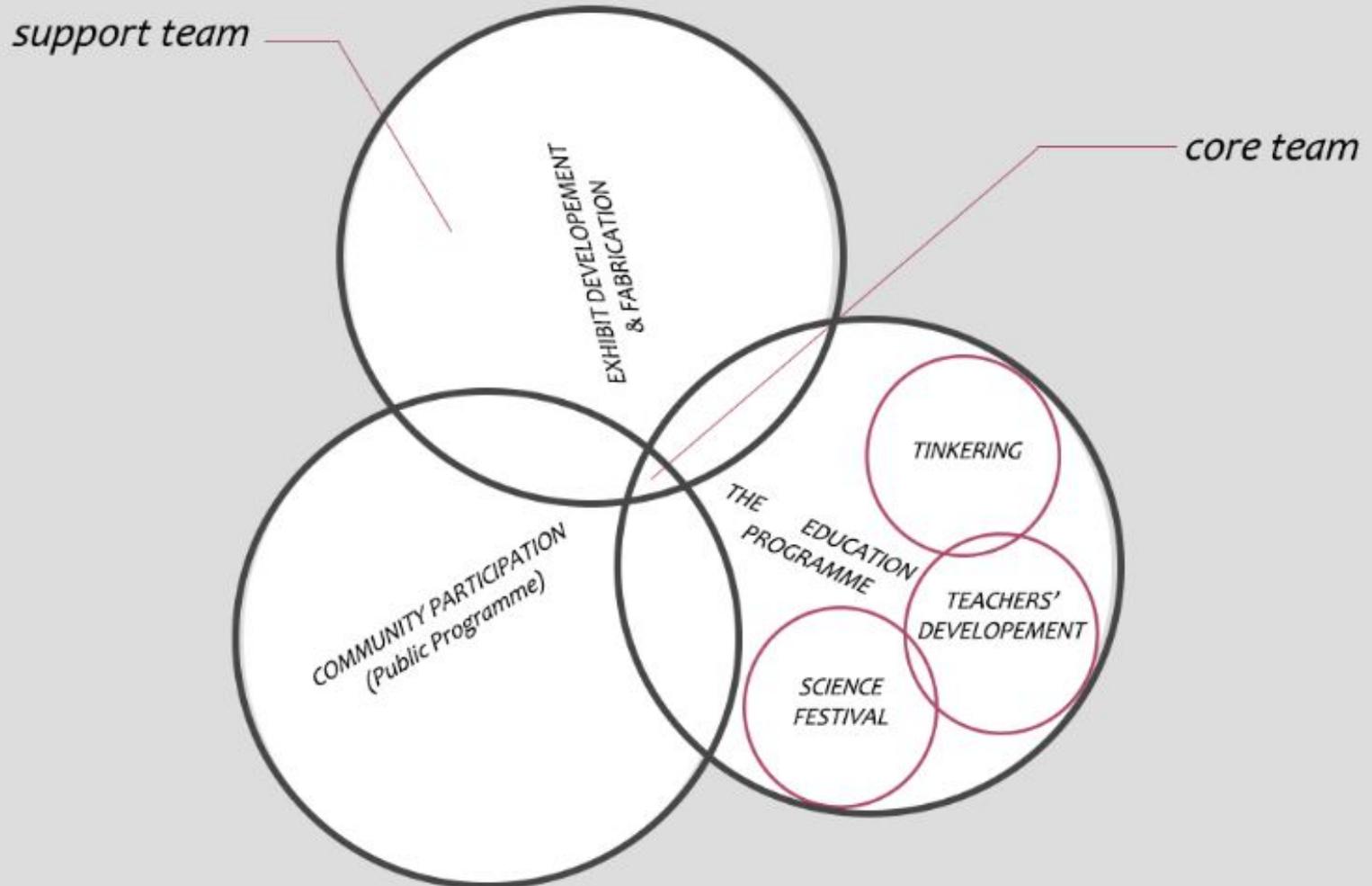
# Vision



استوديو  
العلوم  
Science  
Studio

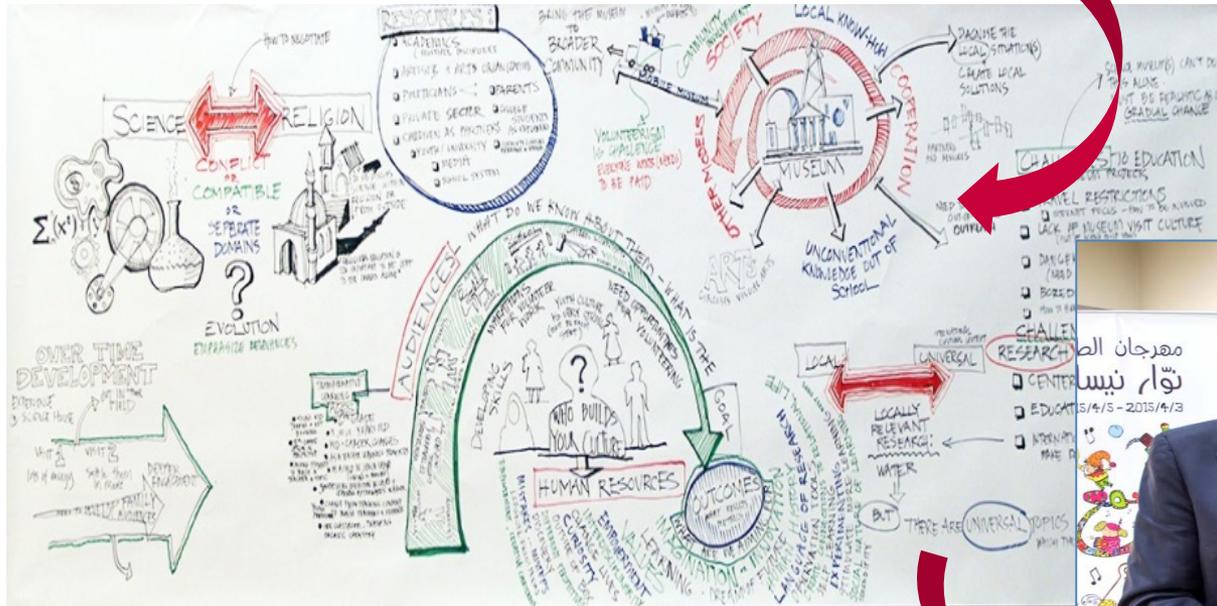
- A model in **sustainability**
- A model for **integrative** learning
- A space that nurtures **creativity, imagination** and **innovation**
- A space for **community engagement** and co-creation

# Science Studio's Programmes



# The History

## Towards an Interactive Science Centre in Palestine



### Master Plan research results

- Importance of exhibit development to be in-house for the sustainability of the science centre
- Supporting the educational programme
- The importance of the existence of a science centre in Palestine.



# Human Resources Development



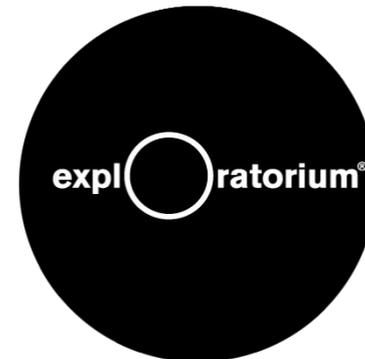
## Core Team

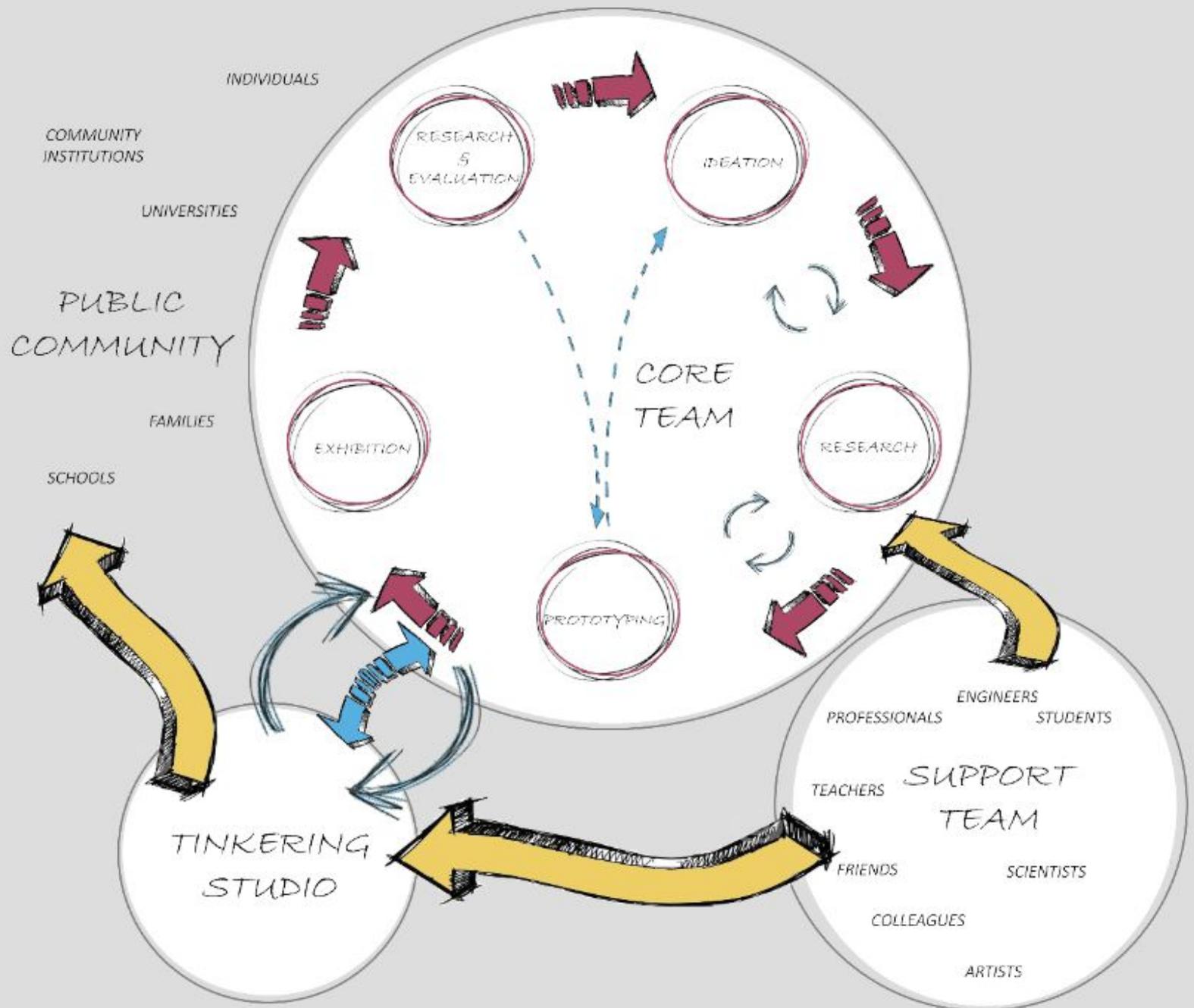
Build a team that can guarantee the permanence of the process

Importance of the human element

Training the team was step #1

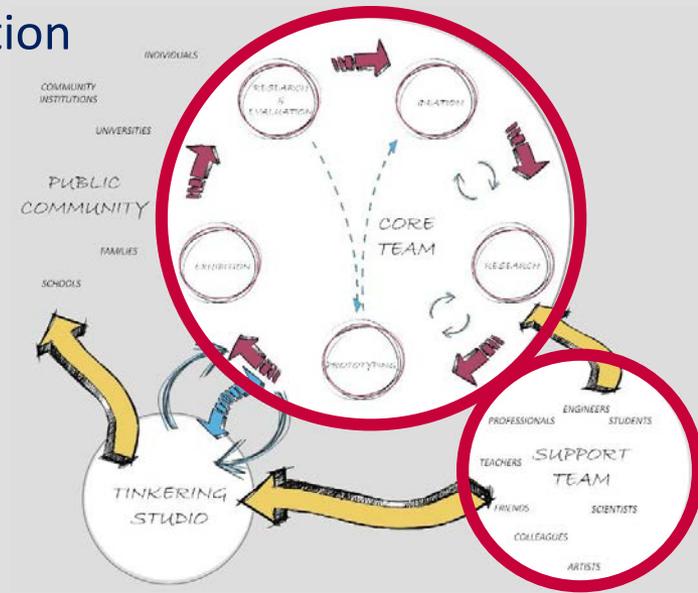
مؤسسة  
عبد المحسن  
القطان  
A M QATTAN  
FOUNDATION







- Machine Training
- Prototyping
- Exhibit Fabrication





- Interactive Exhibits
- Engaging Activities
- Immersive Experiences





Why a Science Centre in Ramallah?



**LEBANON**

**SYRIA**

**JORDAN**

**EGYPT**

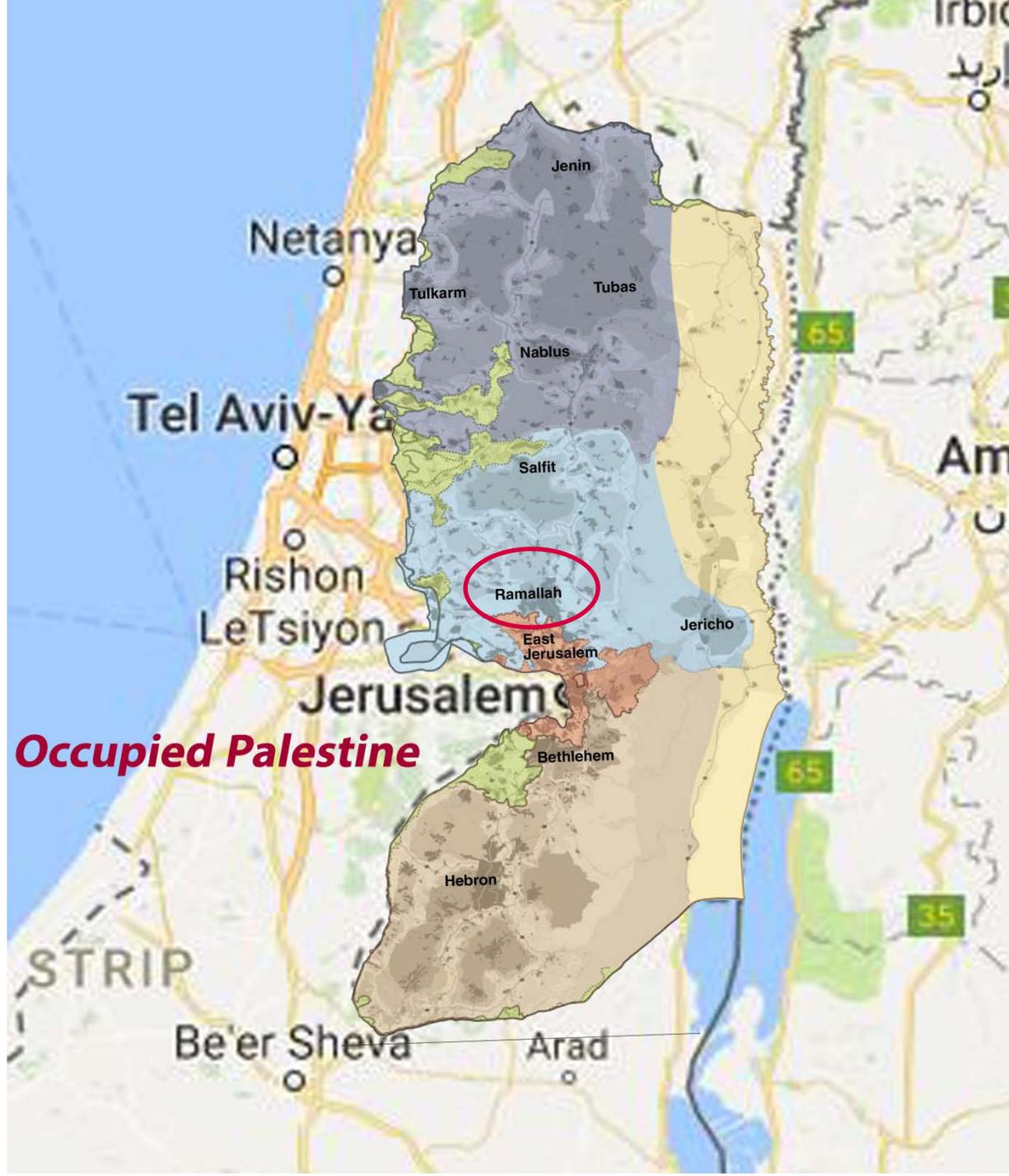
-  North : Jenin, Qalqilia, Tulkarem, Nablus
-  Middle : Salfit, Ramallah, Jericho
-  South : Bethlehem, Hebron
-  "East" Jerusalem

Base Map:  
<https://www.mas.google.com>

West Bank map:  
B'Tselem - *The Israeli Information Center for Human Rights in the Occupied Territories*  
[https://www.btselem.org/download/separation\\_barrier\\_map\\_eng.pdf](https://www.btselem.org/download/separation_barrier_map_eng.pdf)

*“The establishment of rich educational institutions, and the rise of the "urban life-style" in Ramallah, has in turn, attracted many young people, and students to settle in Ramallah”*

(Taraki, 2008)



Base Map:  
<https://www.mas.google.com>

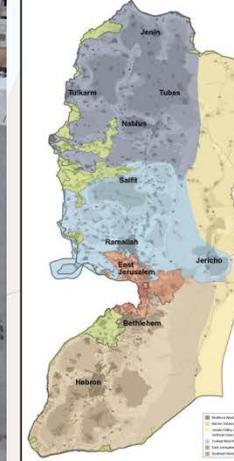
West Bank map:  
B'Tselem - The Israeli Information Center for Human Rights in the Occupied Territories  
[https://www.btselem.org/download/separation\\_barrier\\_map\\_eng.pdf](https://www.btselem.org/download/separation_barrier_map_eng.pdf)

# The Separation Barrier In the West Bank

February, 2008



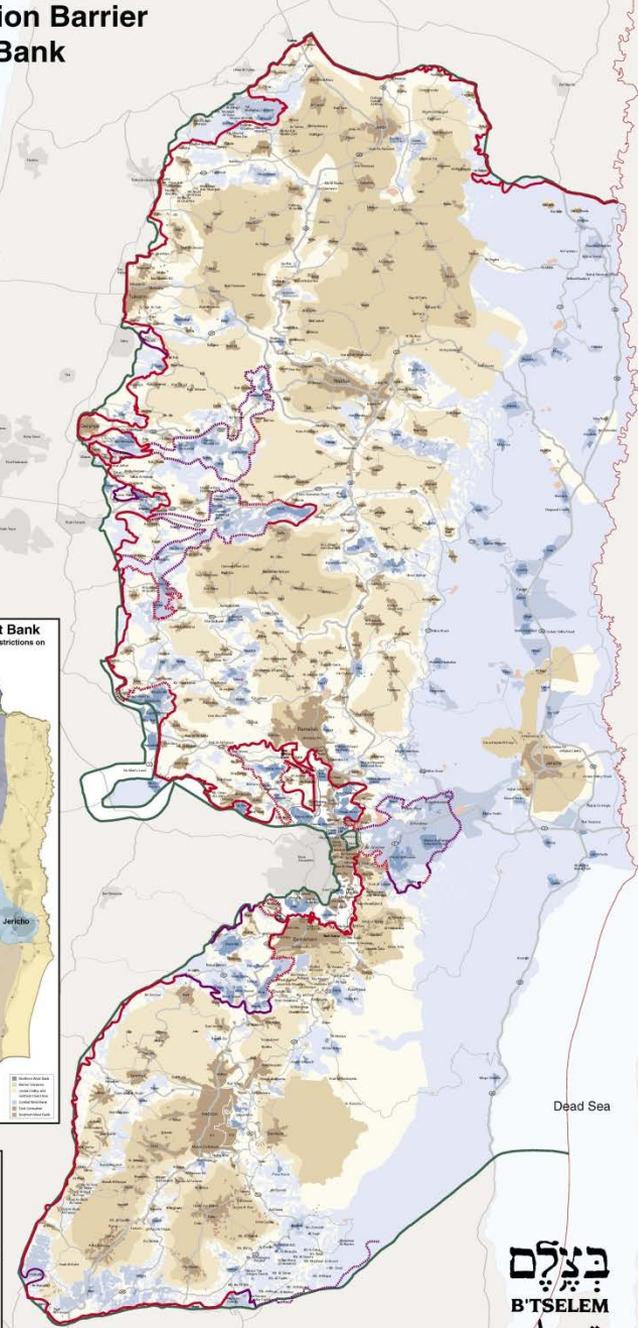
**Fragmentation of the West Bank**  
As a result of checkpoints and other Israeli restrictions on freedom of movement



- Completed Route  
 - Barrier Under Construction  
 - Approved Barrier Route  
 - Route Requiring Further Approval  
 - Green Line (1949 Armistice Line)  
 - Road  
 - Built-up Area (Settlement)  
 - Area within Municipal Boundary (Settlement)  
 - Regional Council Jurisdictional Area (Settlement)  
 - Area Annexed to Israel  
 - Military Base  
 - Built-up Area (Palestinian)  
 - Area A  
 - Area B  
 - Area C

**Abbreviations:**  
 RC - Refugee Camp  
 Kh - Khirba - Small Village

Scale 1:150,000  
 0 1 2 3 4 5 10 KM  
 0 1 2 3 4 5 10 Miles



Dead Sea

**ב'תס"ל**  
**B'TSELEM**  
**ב'תס"ל**

B'TSELEM - The Israeli Information Center for Human Rights in the Occupied Territories  
 © Hadoya 30, 18th Floor, Tel-Aviv, Jerusalem 61020  
 Tel: 072-6273550 Fax: 072-6274551  
 mail@btselem.org http://www.btselem.org



Aerial view of Ramallah and Al-Bireh:  
DAAR – Decolonizing Architecture Art Residency - Jabel Tawil / P'sagot – introduction – case study

<http://www.decolonizing.ps/site/introduction/>

# Palestinian Migration into Ramallah and Al-Bireh

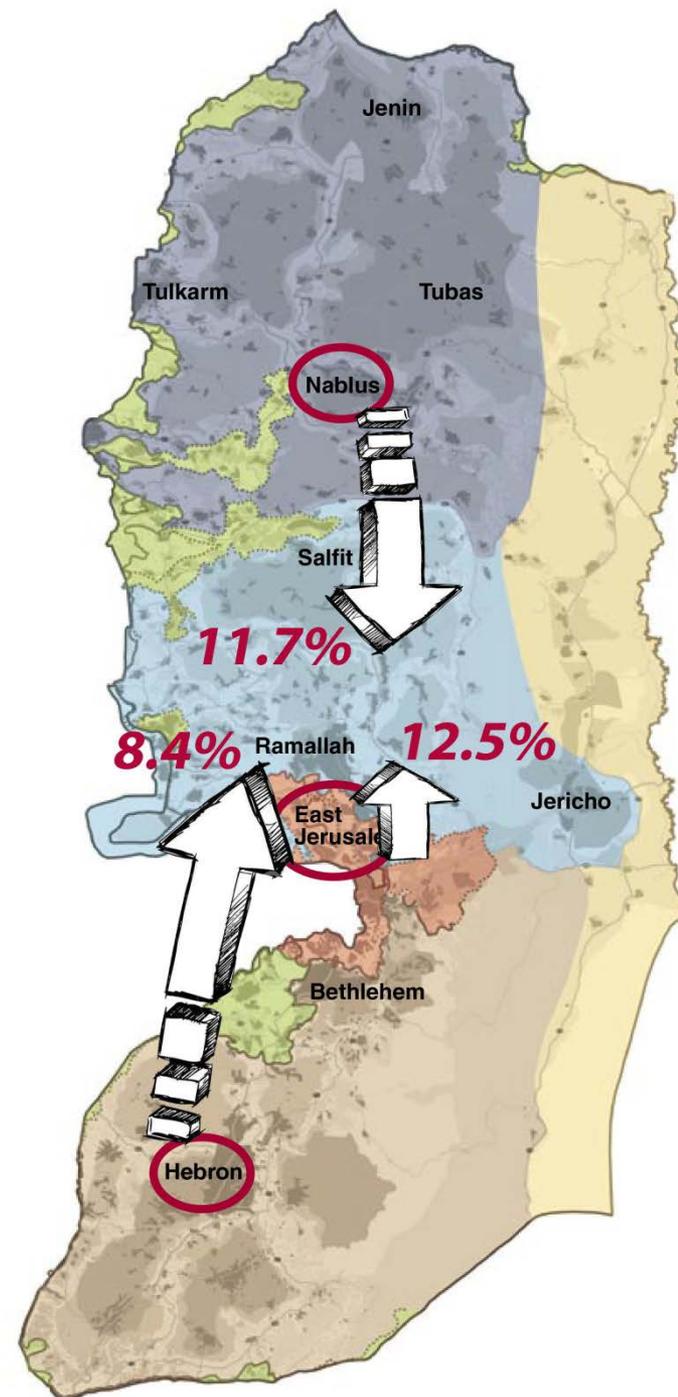
Age group: 15 – 29 (37%), 30 – 44 (26.4%), 45-59 (22%)

**Political** Reasons: Segregation Wall, Checkpoints around Settlements

**Economical** Reasons: Raise the quality of life, education, unemployment

Ramallah city Population

	2007	2016
Ramallah City	27092	35140
Al-Bireh	37690	48887
Ramallah District (villages and refugee camps)	275981	357986



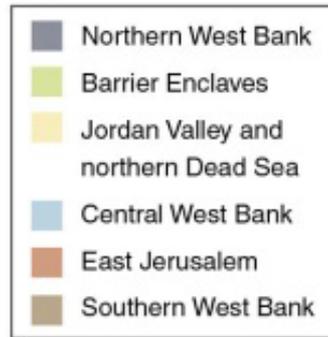


Picture on left:  
Before their Diaspora – by Walid Khalidi  
<http://btd.palestine-studies.org/f-by-subject/236>

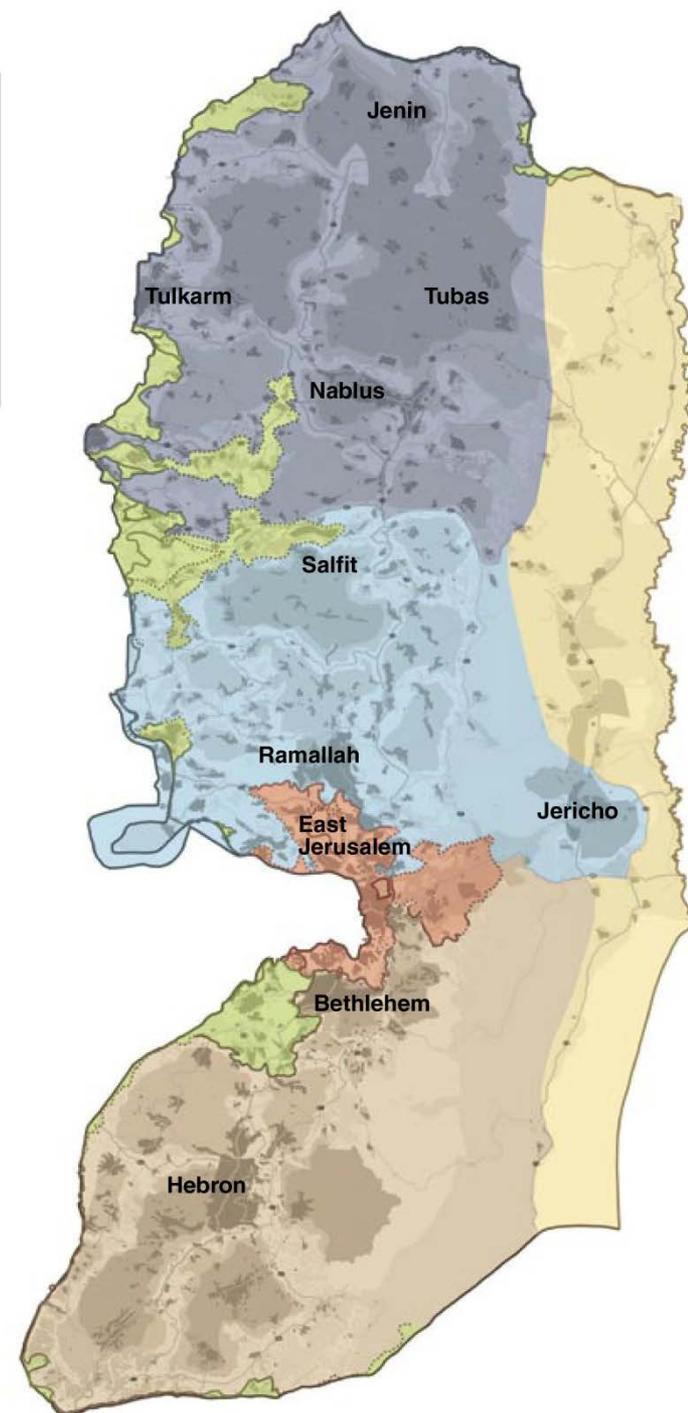


Picture on right:  
<http://www.citiestips.com/view/-580830>

Why a Science Centre in Ramallah?



- Its **location**: centrality, accessibility
- Considered a **hub** for culture and Education
- Opens more **employment** opportunities

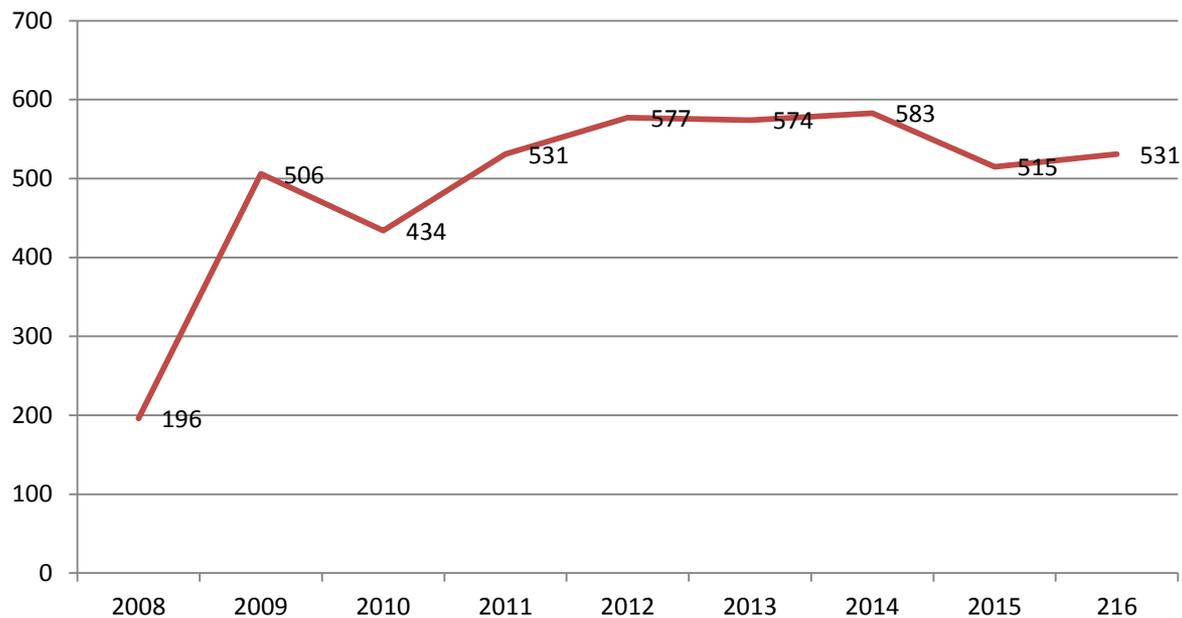


West Bank map:

B'Tselem - *The Israeli Information Center for Human Rights in the Occupied Territories*

[https://www.btselem.org/download/separation\\_barrier\\_map\\_eng.pdf](https://www.btselem.org/download/separation_barrier_map_eng.pdf)

## Number of Cultural Centres (West Bank)



— Number of Cultural Centres

from **196** in 2008  
to **531** in 2016



مؤسسة  
عبد المحسن  
القطان  
A M QATTAN  
FOUNDATION



# How Can the Science Studio Contribute to a Sustainable Future of Ramallah City?

A Sustainable City and Communities

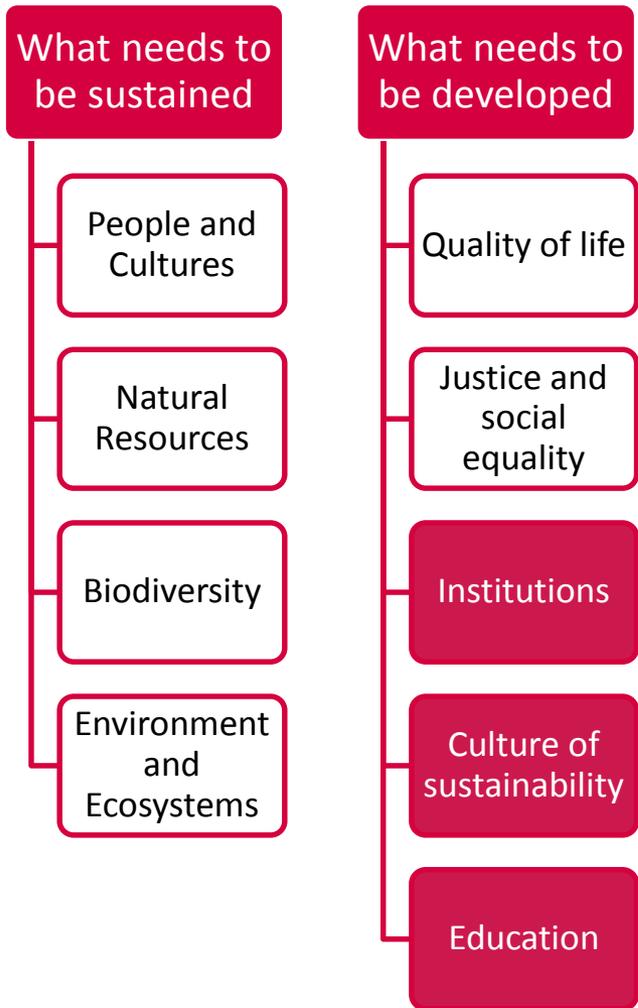
*“Meeting fundamental human needs while preserving the life support system of the City”*

Sustainability Science

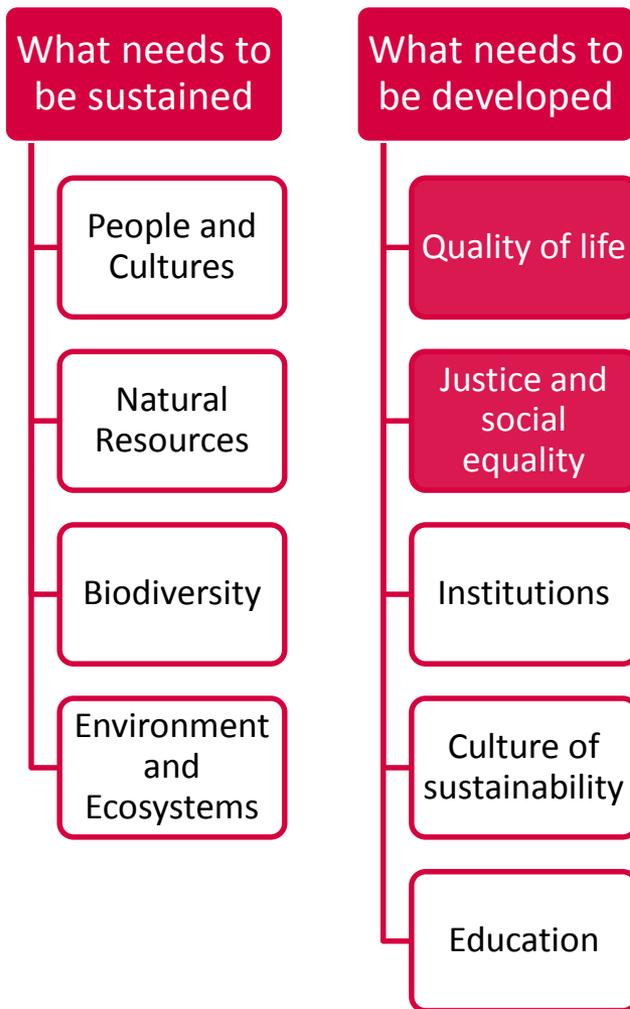
*“The interactions between natural and social systems, and how those interactions affect the challenge of sustainability”*

PNAS: December 6, 2011 vol. 108 no. 49

# In order to achieve sustainability



## In order to achieve sustainability



Respect the local law and exceed it when it comes to humanities

Olive picking vacation

Maternity leave and nursing leave

**A.M. Qattan Foundation**  
**The new building**  
**experience**



*First Contemporary Fully Functioning Green Building in Palestine*

**Green Sustainable Local Building Materials**

- Louvers
- Local marble and stone
- Photovoltaic cells

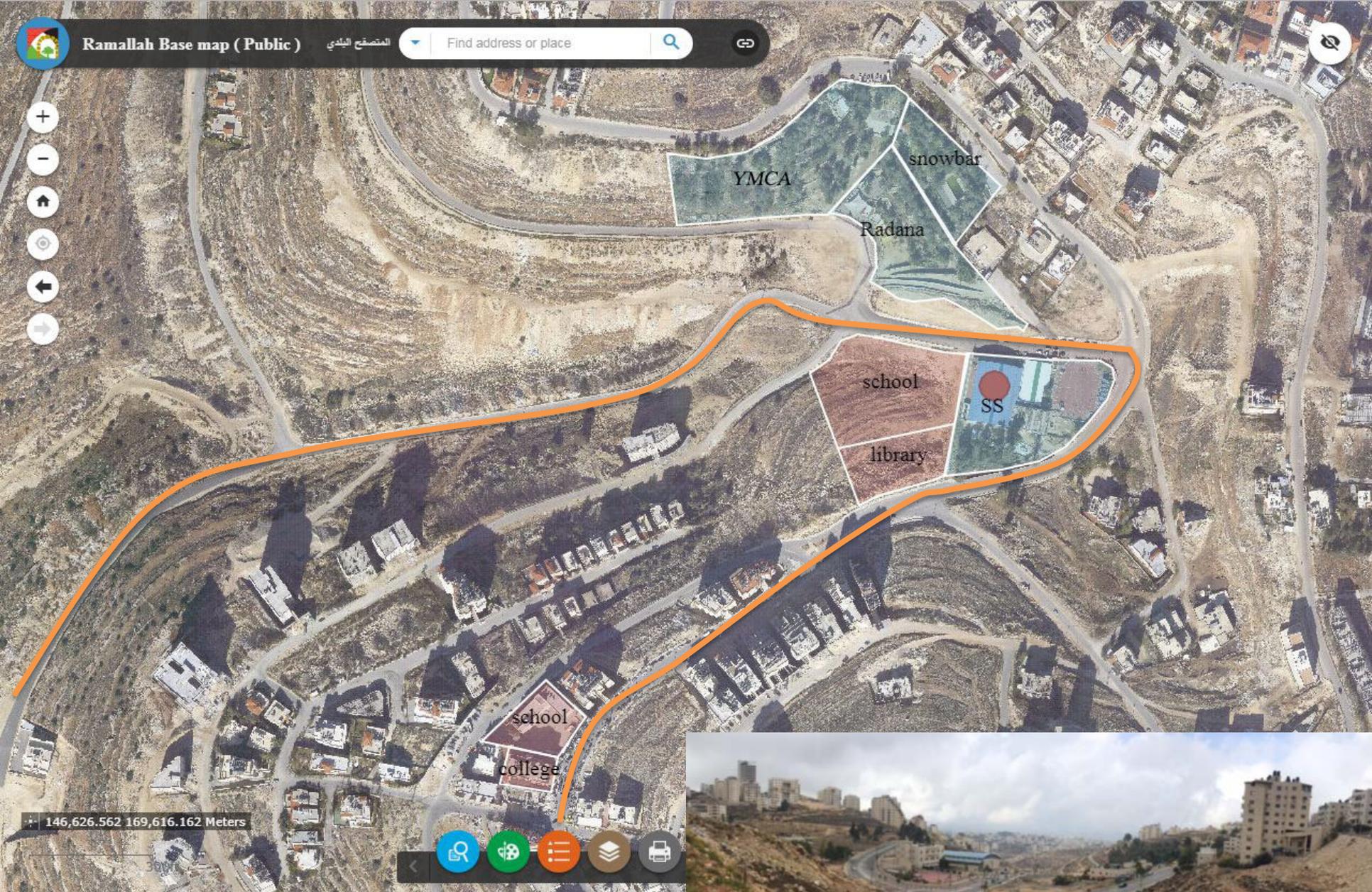
**Passive Architectural design techniques**

- Building Orientation
- Respecting the Contours
- Moving existing trees to new location





Rehabilitate an abandoned  
existing space



Base map:

[http://ramallahm.maps.arcgis.com/apps/webappviewer/index.html?id=d392c74a8e134aca8da572ed08fd952&m\\_id=278](http://ramallahm.maps.arcgis.com/apps/webappviewer/index.html?id=d392c74a8e134aca8da572ed08fd952&m_id=278)





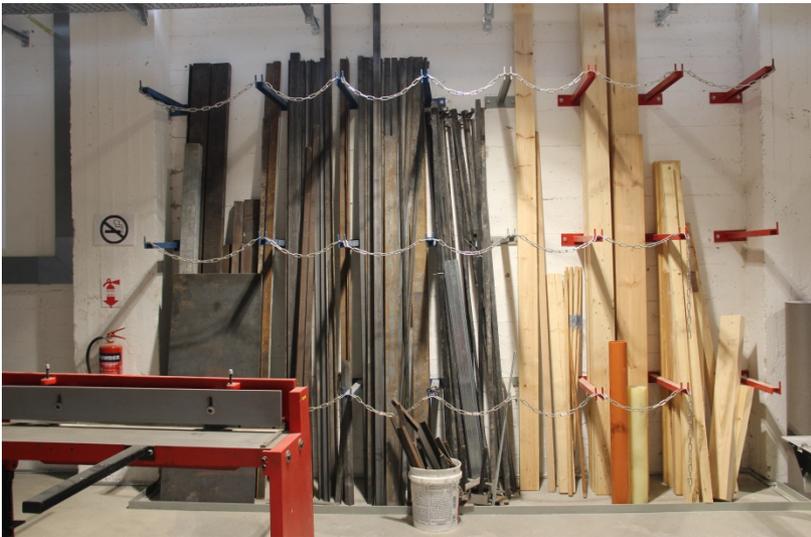




# In-house practices towards sustainability

# Fabrication Shop





Reuse scrap material to produce prototypes and sample exhibits



# Tinkering Studio



# Seed Library





# Outreach practices towards sustainability

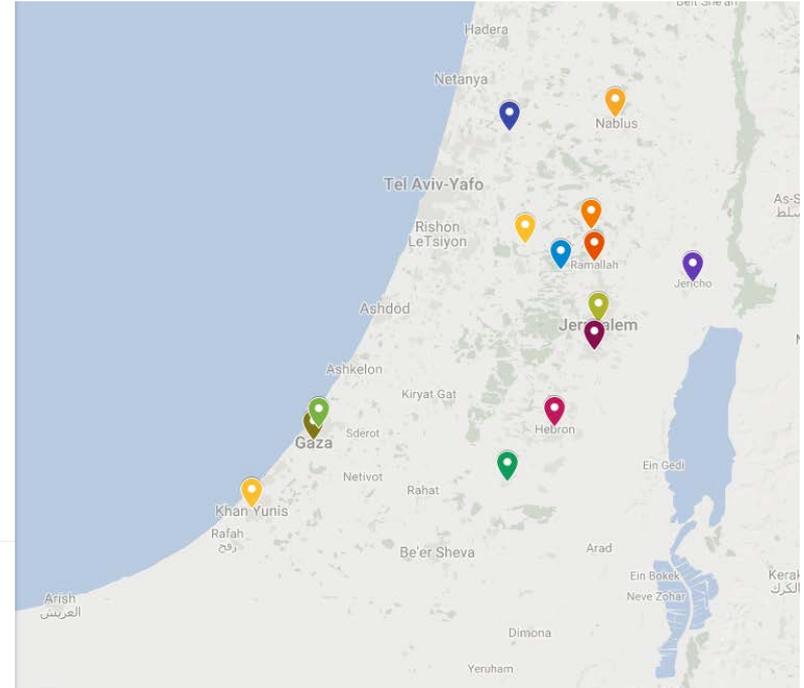
# Science Days Festival



- Tinkering
- Techers' Professional Development
- Exhibitions
- Science Café

## فعاليات المهرجان | SDP Activities

- اريحا | Jericho
- القدس | Jerusalem
- قاقيلية | Qalqilia
- بيت لحم | Bethlehem
- غزة | Gaza
- بيرزيت | Birzeit
- الخليل | Hebron
- نعلين | Ni'lin
- الظاهرية | Al-Thahiriya
- بيت عور الفوقا | Bait Our Al-Foqa
- جباليا | Jibaliya
- خان يونس | Khan Yunis
- نابلس | Nablus
- رام الله | Ramallah



# After Dark Tinkering

Engage adults in Tinkering and science

Attract adults to discuss scientific topics

Science community can exceed toward the public as well not only scientists



# Teachers' Professional Development



Teacher take the knowledge and experiences to their areas



Exhibition space



## Material Science

Local and national theme connected to the Palestinian context, culture and history

# Science Café



## Anthropocene

Tackle controversial global issues in the science festival as a public event