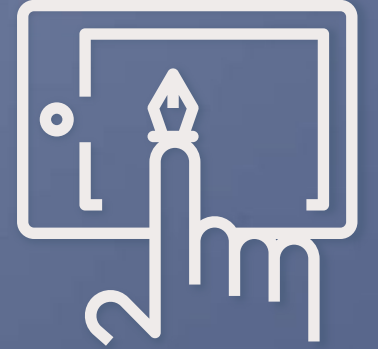


# Cultural Heritage on Mobile Devices



a comparison of apps dealing with  
Bauhaus World Heritage Sites  
in Israel and Germany

Joatan Preis Dutra

PhD candidate at Bauhaus-University Weimar / Germany

Lecturer at De Montfort University Leicester / UK

Bauhaus-Universität Weimar



## Joatan Preis Dutra (Jonny)

Academic Career: Germany & UK

Kiel



Bremen



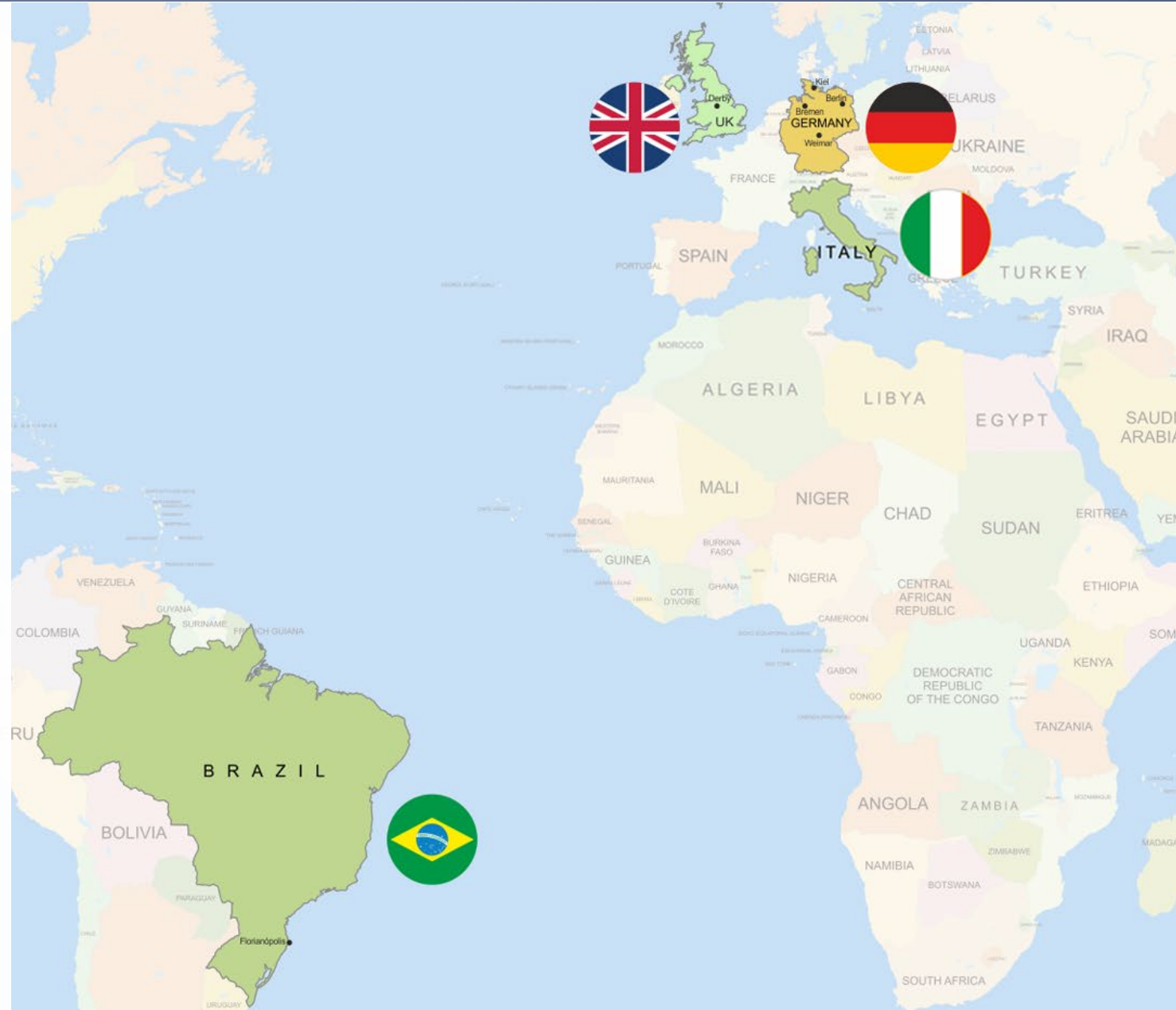
Weimar  
(& Berlin)



Leicester



From: Florianópolis / Brazil  
(Italian born and braised in Brazil)

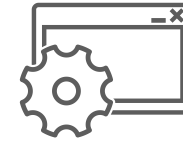




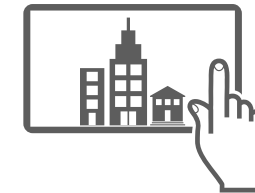
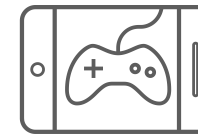
BA (Hons) in History and Teaching  
Florianópolis / Brazil - 2002



MSc in Multimedia Production  
Kiel / Germany - 2006



MSc in Digital Media  
Bremen / Germany - 2011



PhD Candidate in Media  
Weimar / Germany (Mobile Media Group)



Lecturer in Media Production  
Leicester / UK (Leicester Media School)



# UNESCO World Heritage Sites (WHS)

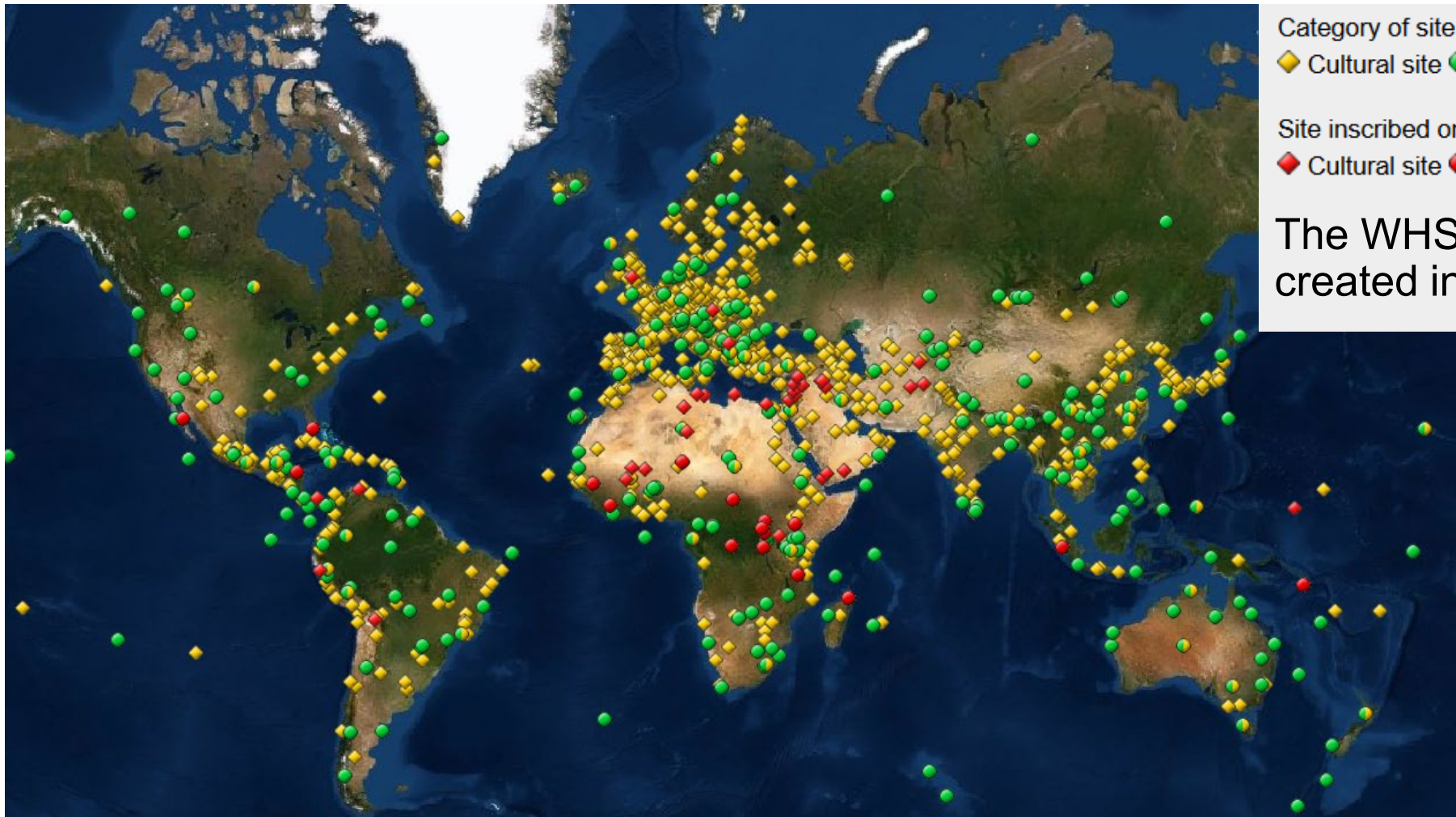


United Nations  
Educational, Scientific and  
Cultural Organization



World  
Heritage  
Convention

## WHS Map: High concentration in Europe



Category of site

◆ Cultural site ● Natural site ● Mixed site

Site inscribed on the List of World Heritage in Danger

◆ Cultural site ● Natural site ● Mixed site

The WHS convention was created in 1972

Some considerations regarding the WHS in both countries:

- Both countries present locations under the WHS list, including Bauhaus sites.
- In terms of territory, Germany is about 17 times bigger than Israel. This can reflect on the number of WHS locations.



## 9 Cultural sites:

- Masada (2001)
- Old City of Acre (2001)
- **White City of Tel-Aviv – the Modern Movement** (2003)
- Biblical Tels - Megiddo, Hazor, Beer Sheba (2005)
- Incense Route - Desert Cities in the Negev (2005)
- Bahá'í Holy Places in Haifa and the Western Galilee (2008)
- Sites of Human Evolution at Mount Carmel: The Nahal Me'arot / Wadi el-Mughara Caves (2012)
- Caves of Maresha and Bet-Guvrin in the Judean Lowlands as a Microcosm of the Land of the Caves (2014)
- Necropolis of Bet She'arim: A Landmark of Jewish Renewal (2015)

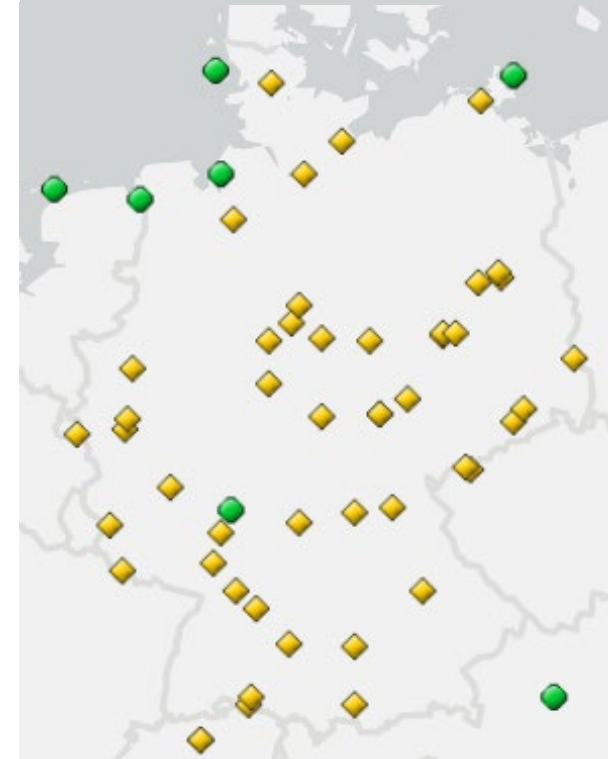
**Acceptance of  
the Convention:  
6 October 1999**



## 43 Cultural Sites

- Aachen Cathedral (1978)
- Speyer Cathedral (1981)
- Würzburg Residence with the Court Gardens and Residence Square (1981)
- Pilgrimage Church of Wies (1983)
- St Mary's Cathedral and St Michael's Church at Hildesheim (1985)
- Roman Monuments, Cathedral of St Peter and Church of Our Lady in Trier (1986)
- Castles of Augustusburg and Falkenlust at Brühl (1984)
- Hanseatic City of Lübeck (1987)
- Frontiers of the Roman Empire (1987, 2005, 2008)
- Palaces and Parks of Potsdam and Berlin (1990, 1992, 1999)
- Abbey and Altenmünster of Lorsch (1991)
- Mines of Rammelsberg, Historic Town of Goslar and Upper Harz Water Management System (1992, 2010)
- Maulbronn Monastery Complex (1993)
- Town of Bamberg (1993)
- Völklingen Ironworks (1994)
- Collegiate Church, Castle and Old Town of Quedlinburg (1994)
- **Bauhaus and its Sites in Weimar, Dessau and Bernau (1996, 2017)**
- Cologne Cathedral (1996)
- Luther Memorials in Eisleben and Wittenberg (1996)
- Classical Weimar (1998)
- Museumsinsel (Museum Island), Berlin (1999)
- Wartburg Castle (1999)
- Garden Kingdom of Dessau-Wörlitz (2000)
- Monastic Island of Reichenau (2000)

## Ratification of the Convention: 23 August 1976





## 43 Cultural Sites (cont.)

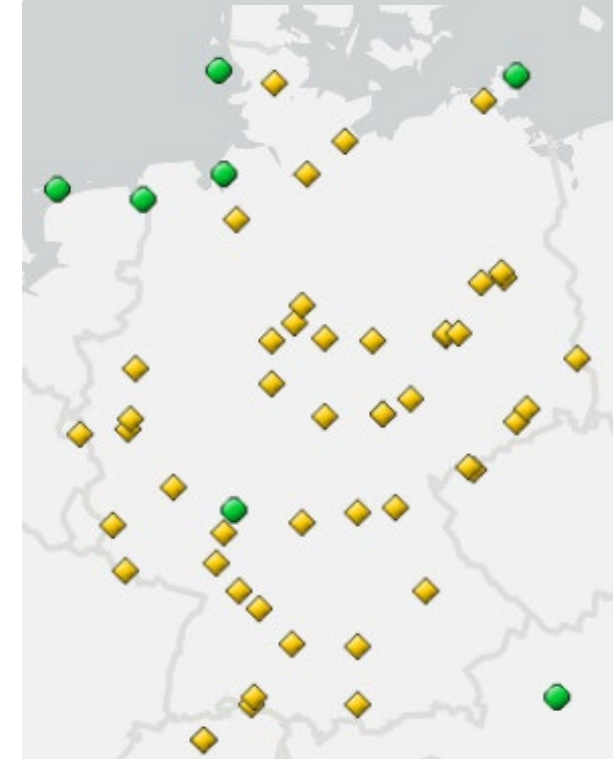
- Zollverein Coal Mine Industrial Complex in Essen (2001)
- Upper Middle Rhine Valley (2002)
- Historic Centres of Stralsund and Wismar (2002)
- Muskauer Park / Park Mużakowski (2004)
- Town Hall and Roland on the Marketplace of Bremen (2004)
- Old town of Regensburg with Stadtamhof (2006)
- Berlin Modernism Housing Estates (2008)
- Fagus Factory in Alfeld (2011)
- Prehistoric Pile Dwellings around the Alps (2011)
- Margravial Opera House Bayreuth (2012)
- Bergpark Wilhelmshöhe (2013)
- Carolingian Westwork and Civitas Corvey (2014)

- Speicherstadt and Kontorhaus District with Chilehaus (2015)
- The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement (2016)
- Caves and Ice Age Art in the Swabian Jura (2017)
- Archaeological Border complex of Hedeby and the Danevirke (2018)
- Naumburg Cathedral (2018)
- Erzgebirge/Krušnohoří Mining Region (2019)
- Water Management System of Augsburg (2019)

## 3 Natural Sites

- Messel Pit Fossil Site (1995)
- Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe (2007, 2011, 2017)
- Wadden Sea (2009, 2014)

## Ratification of the Convention: 23 August 1976



Just “natural” and “cultural” (and “mixed”) sites?

Category of site

◆ Cultural site ● Natural site ● Mixed site

Site inscribed on the List of World Heritage in Danger

◆ Cultural site ● Natural site ● Mixed site

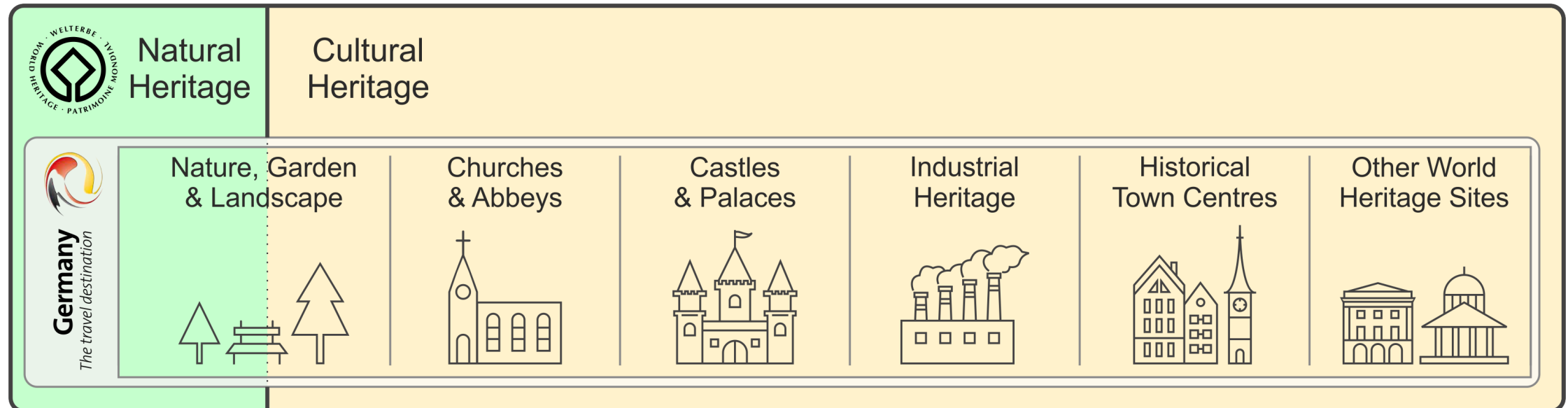




On behalf of the German federal government, the GNTB has been working internationally to promote Germany as a travel destination.

The German association UNESCO-Welterbestätten Deutschland e.V. wishes to increase awareness of Germany's world heritage sites <http://www.unesco-welterbe.de/en/>

The GNTB divided the WHS into more categories than just “natural” and “cultural”.



# UNESCO World Heritage Sites (WHS) & Bauhaus



United Nations  
Educational, Scientific and  
Cultural Organization



World  
Heritage  
Convention

&



- White City in Tel Aviv



## Weimar:

- The 'Van de Velde' building, 1905-06, and
- The 'Main Building', 1904-11, former the Applied Art School.
- Haus Am Horn, 1923.

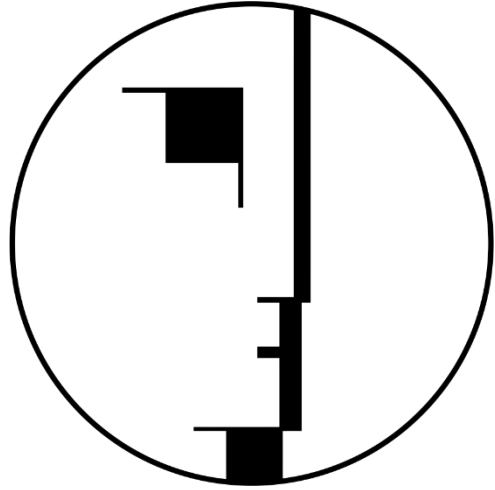
## Dessau:

- Bauhaus Building, the group of seven Masters' Houses, 1926.

## Bernau (added in 2017 to WHS list):

- Houses with Balcony Access in Dessau and the ADGB Trade Union School





- Hauptgebäude der Bauhaus-Universität  
*/ Main Building Bauhaus University*
- Ehemalige Kunstgewerbeschule  
*/ Former School of Arts and Crafts*
- Haus am Horn



- Different profiles



White City / Tel Aviv



Weimar



Dessau



Bernau

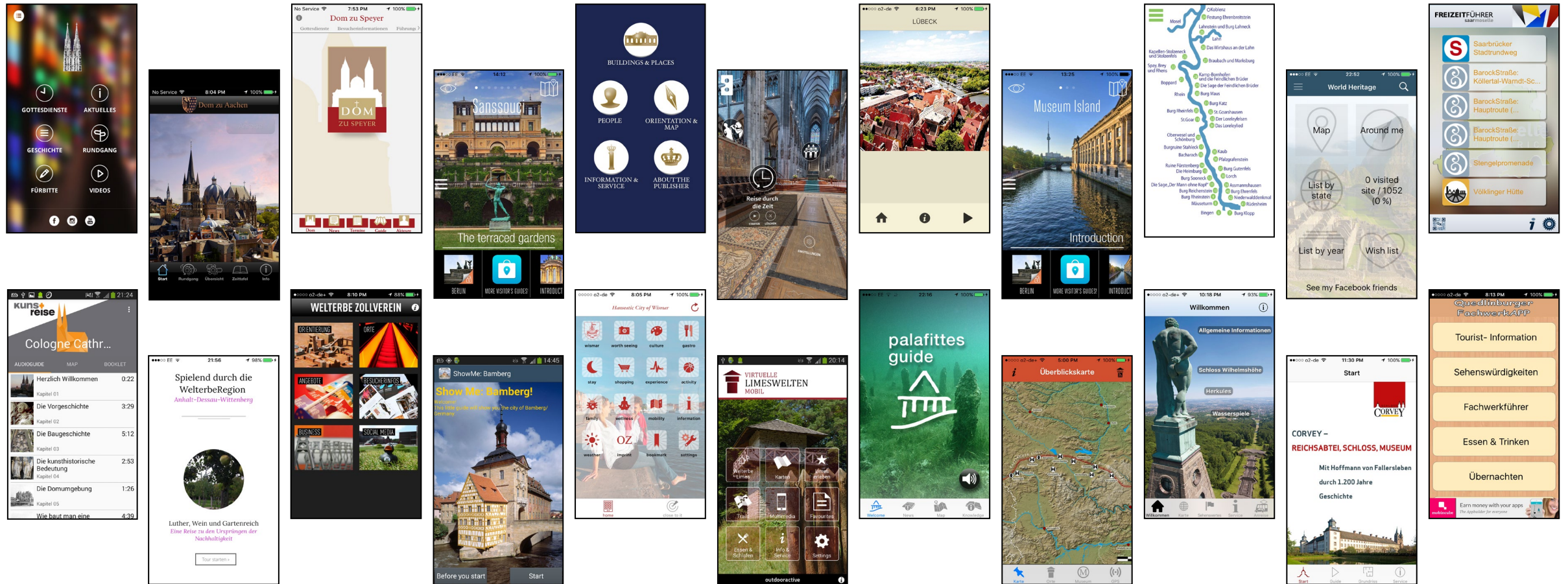


How  
about  
the  
apps?

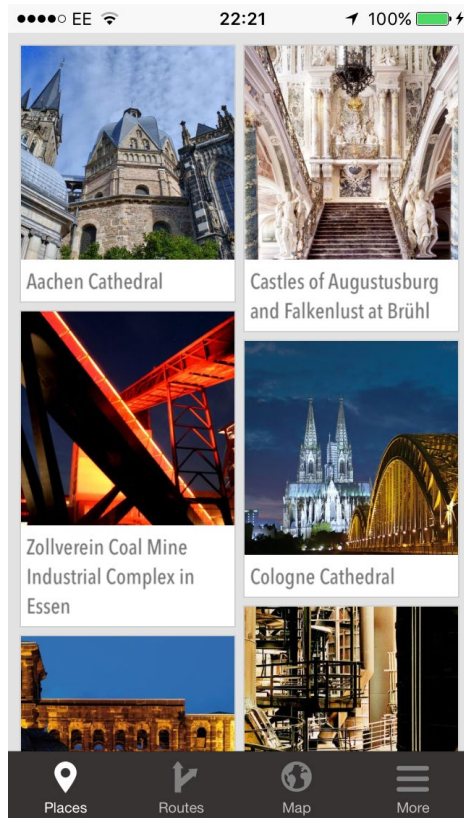


# Dedicated WHS apps in Germany

## ■ 29 Apps (by July 2018)



- 29 Apps (by July 2018)
  - including one developed for the German National Tourist Board (GNTB) including all the German WHS: *UNESCO Welterbe*



UNESCO  
Welterbe



## Bauhaus and its Sites in Weimar and Dessau

As a university of design, the Bauhaus School revolutionised 20th century art and architecture around the world. Today the original buildings in Weimar and Dessau, along with a range of museums and exhibitions, provide an insight into a movement that still seems innovative today.

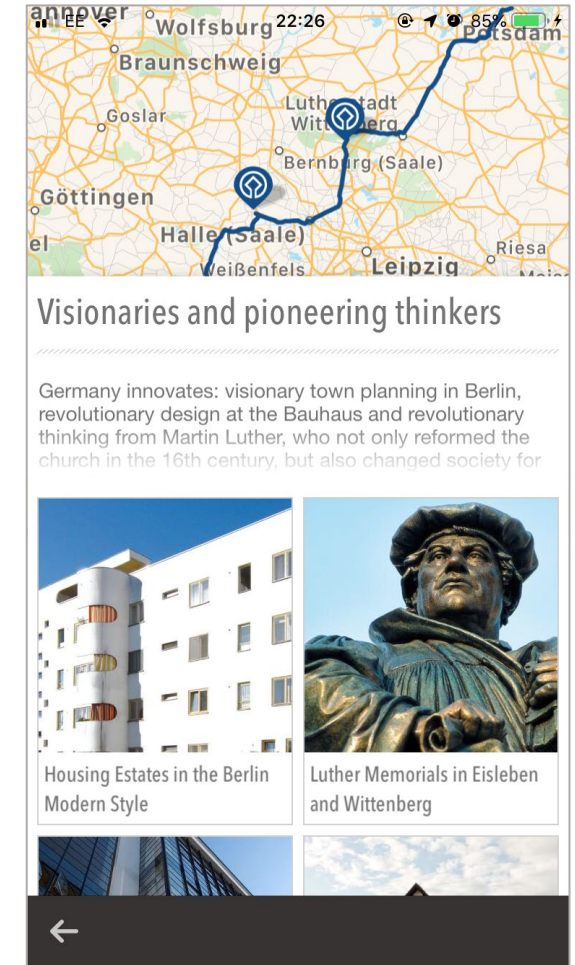
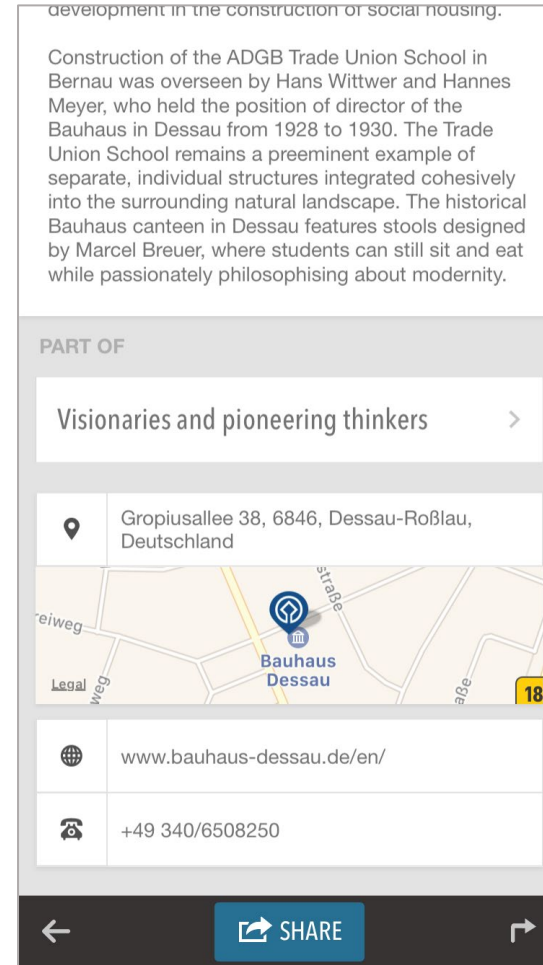
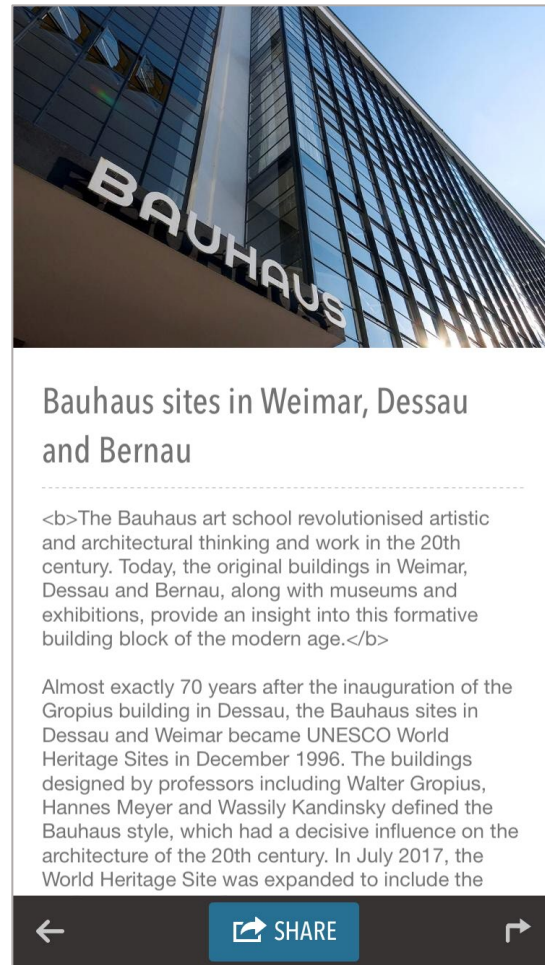
In December 1996, almost 70 years to the day since the dedication of the Gropius Building in Dessau, the Bauhaus sites of



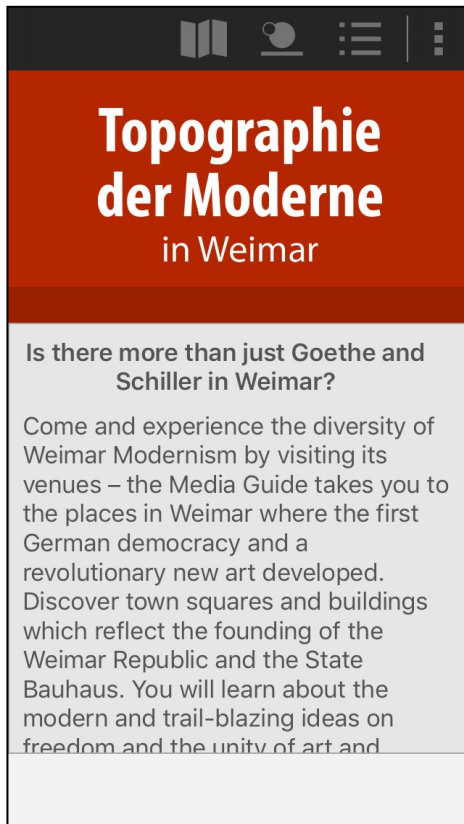
SHARE



- 29 Apps (by July 2018) - App: UNESCO Welterbe



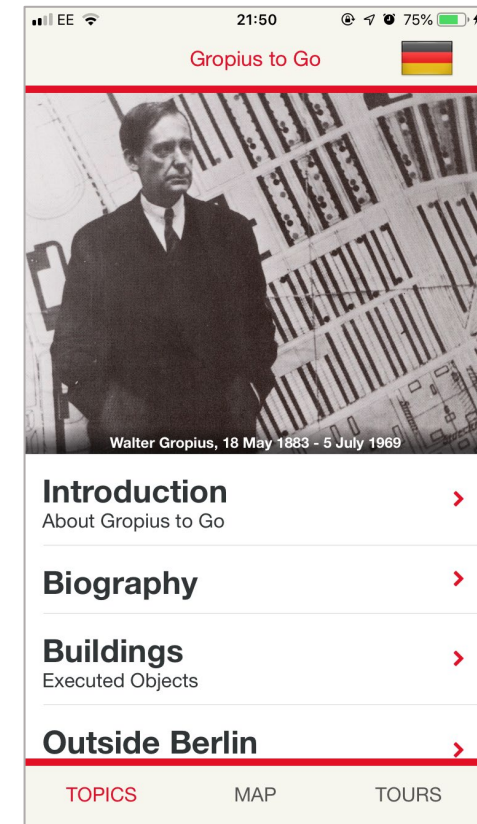
- 29 Apps (by July 2018)
  - including 3 about Bauhaus:



Topographie der Moderne

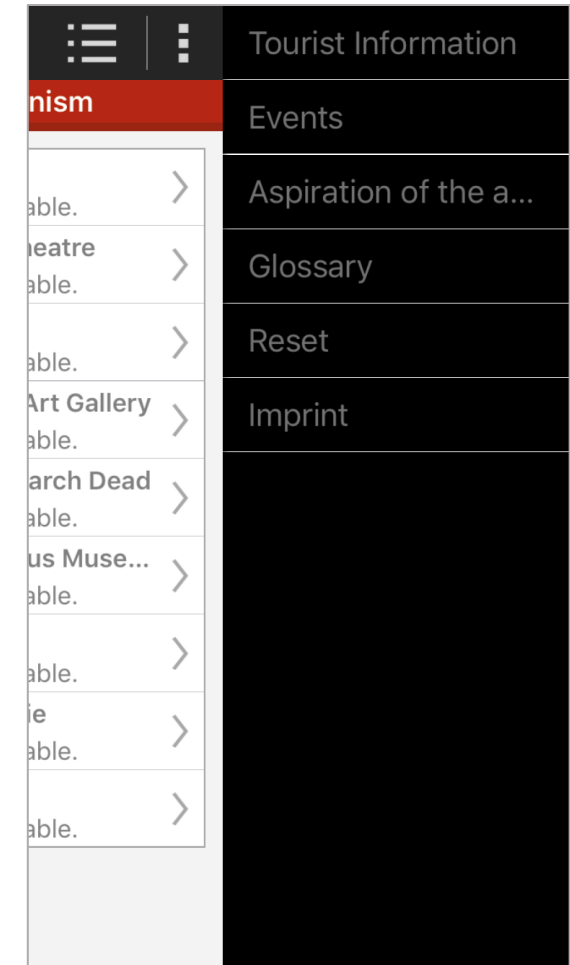
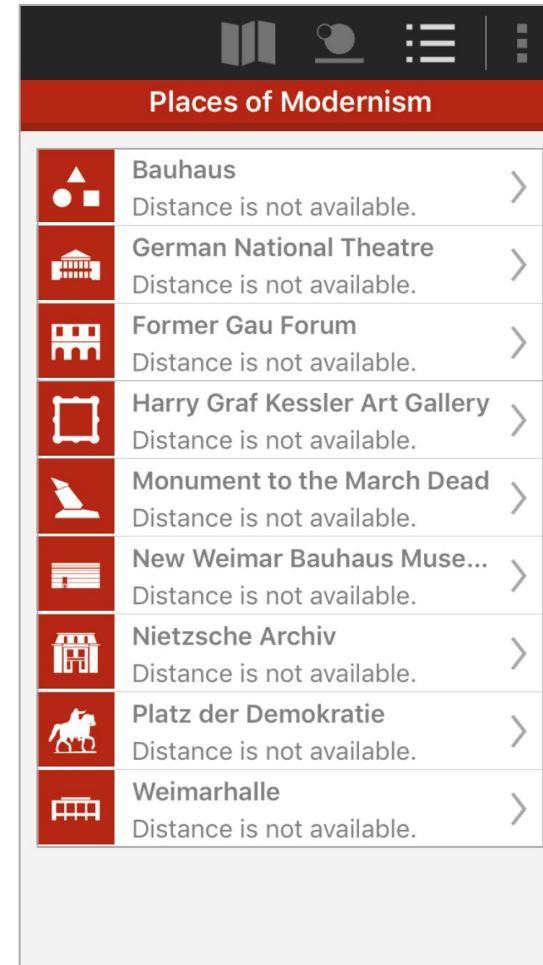
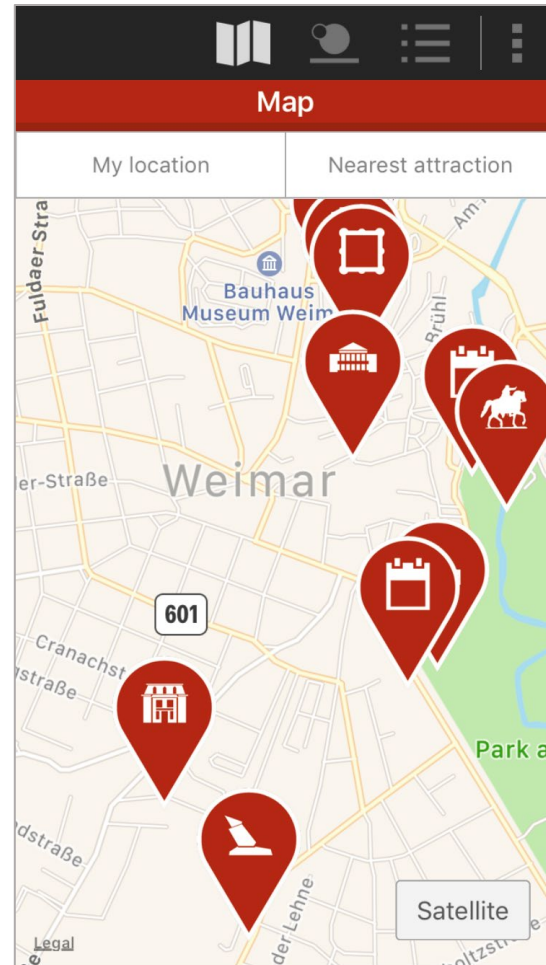
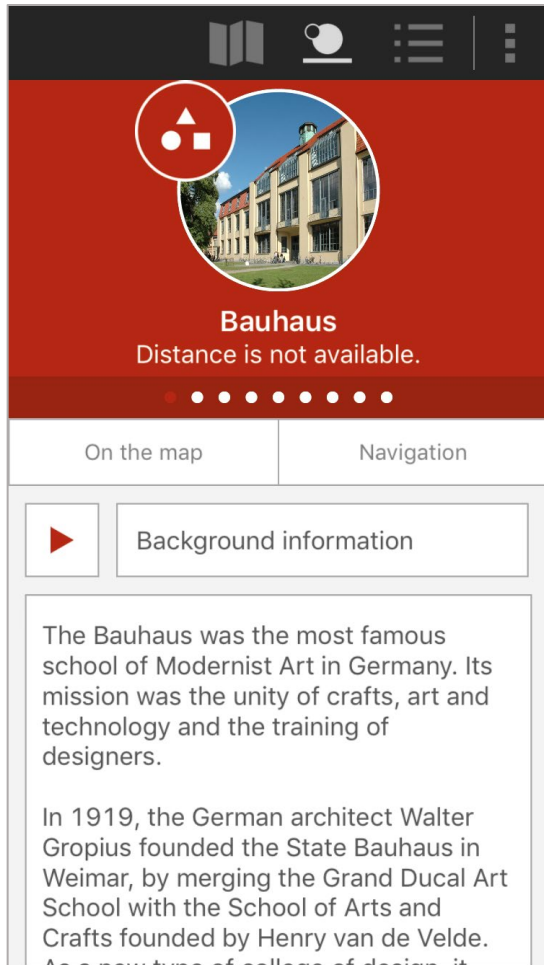


Bauhaus-Archiv (Berlin)

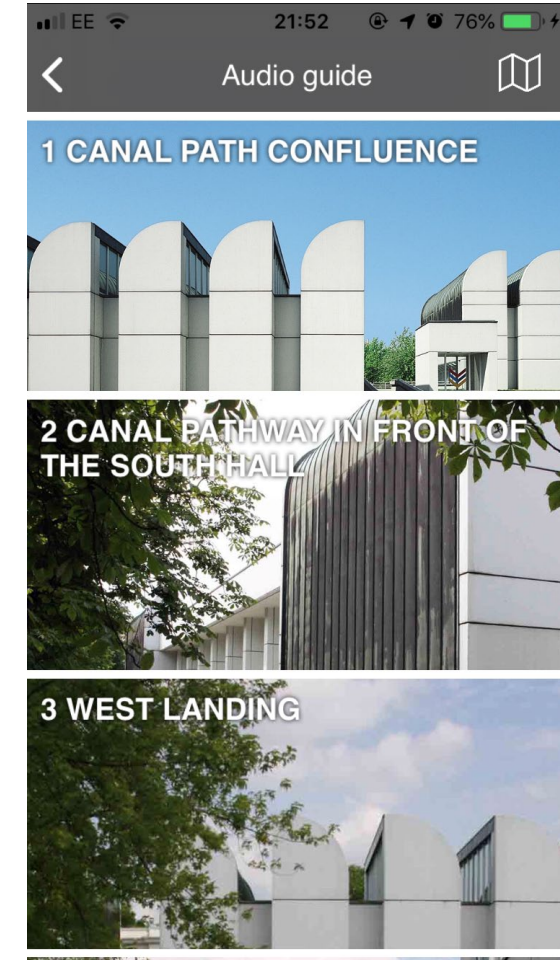


Gropius to Go

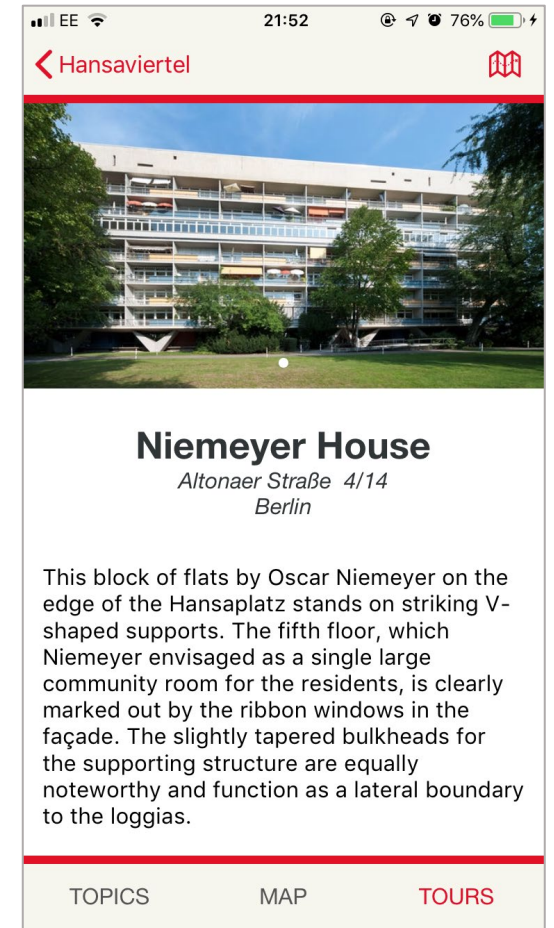
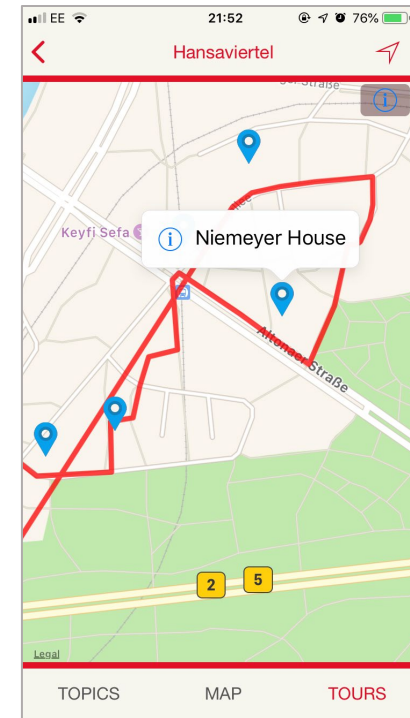
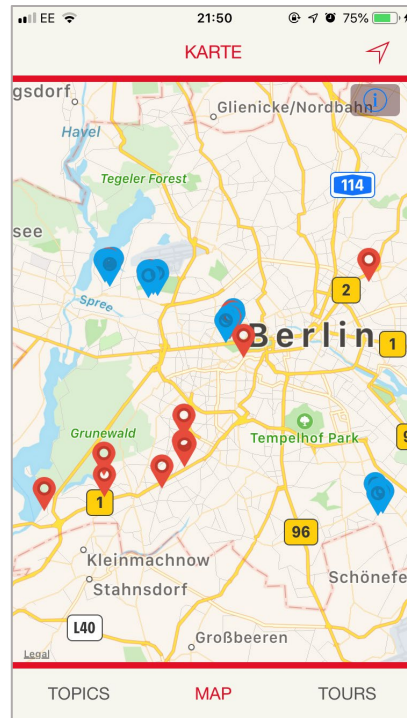
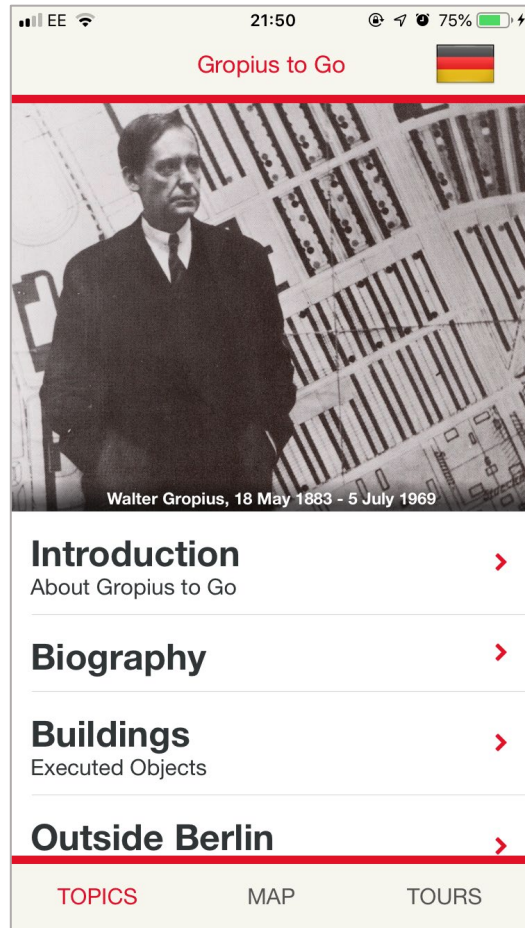
## ■ App: Topographie der Moderne



## ■ App: Bauhaus-Archiv



## ■ App: Gropius To Go

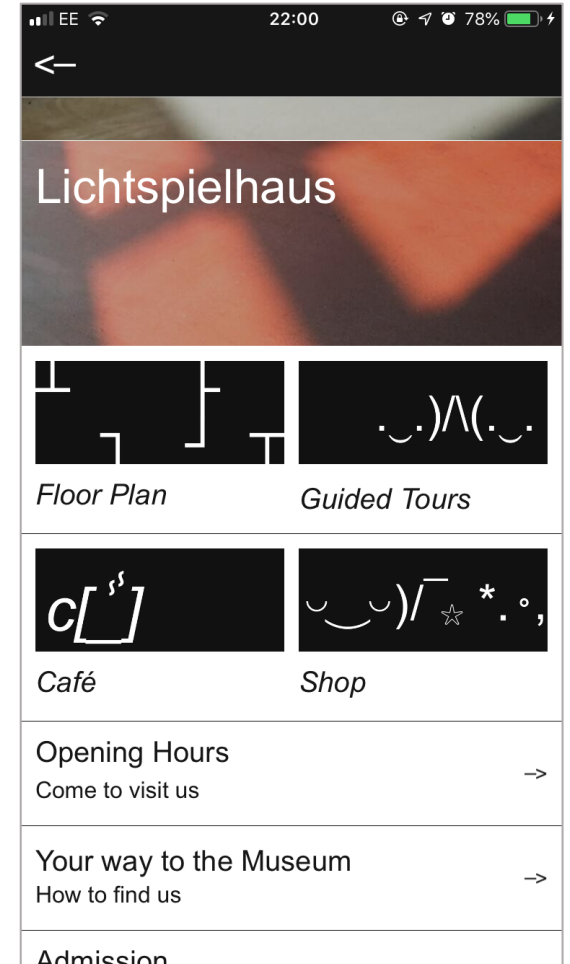
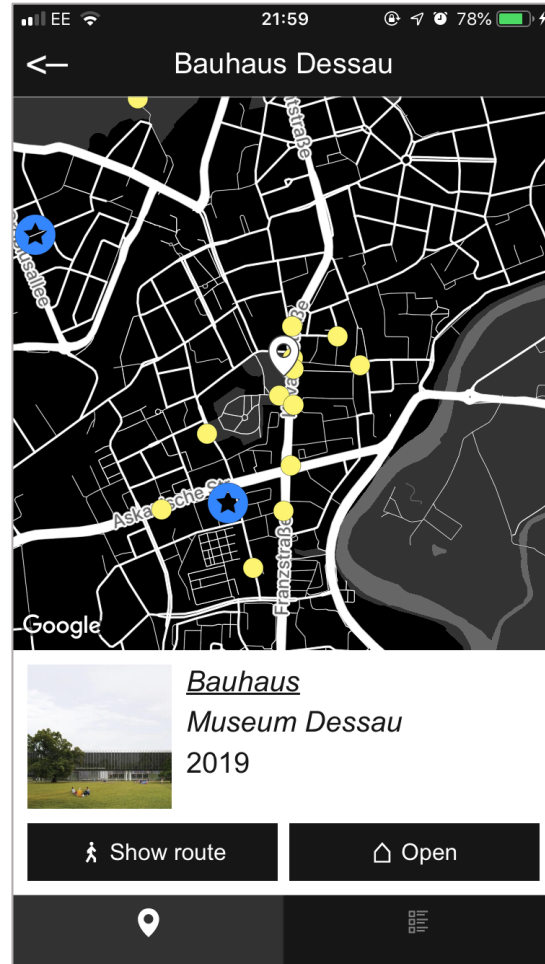




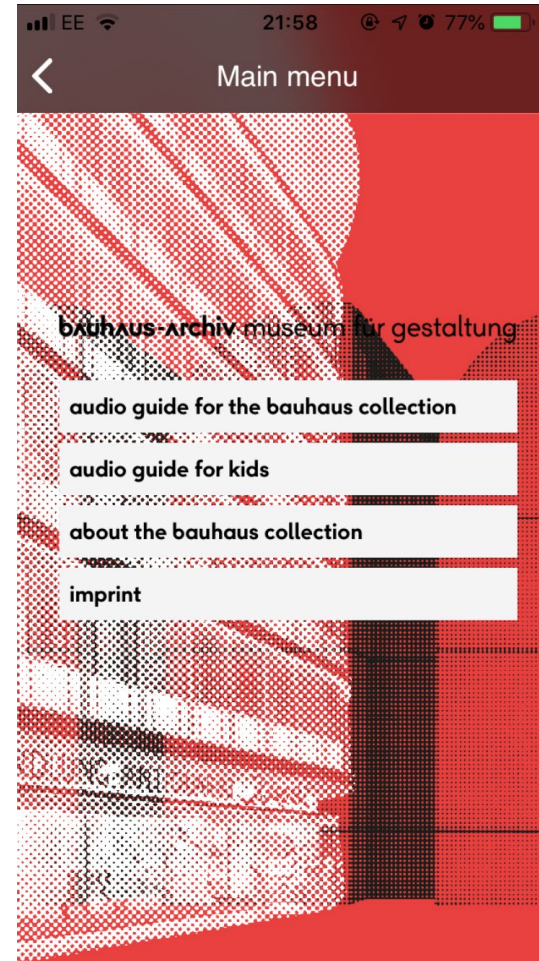
- With the centennial of Bauhaus, it is possible to find even more apps after the previous counting:



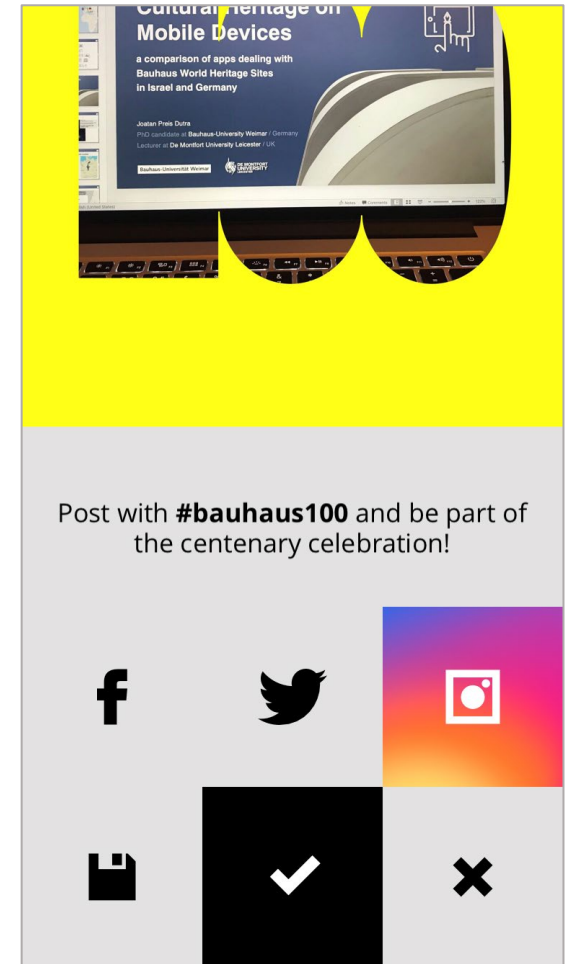
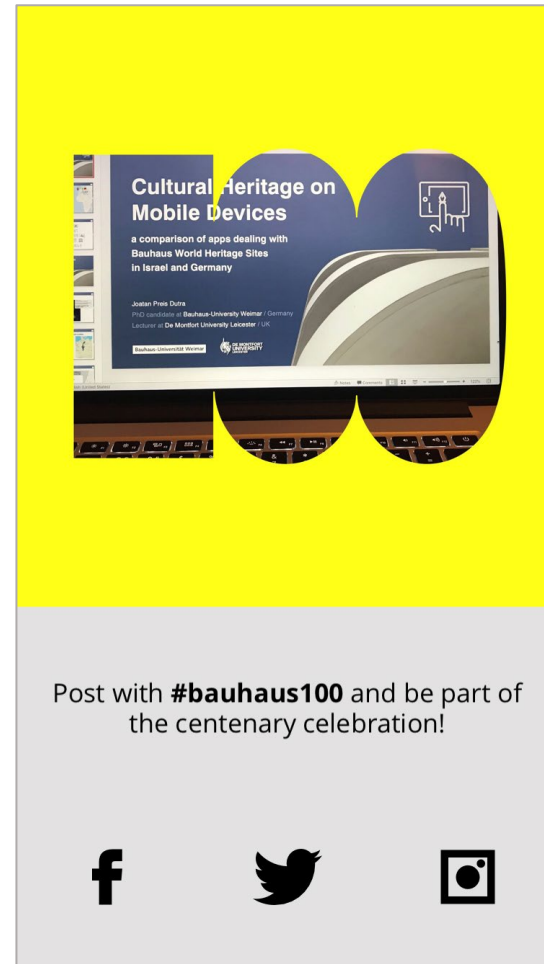
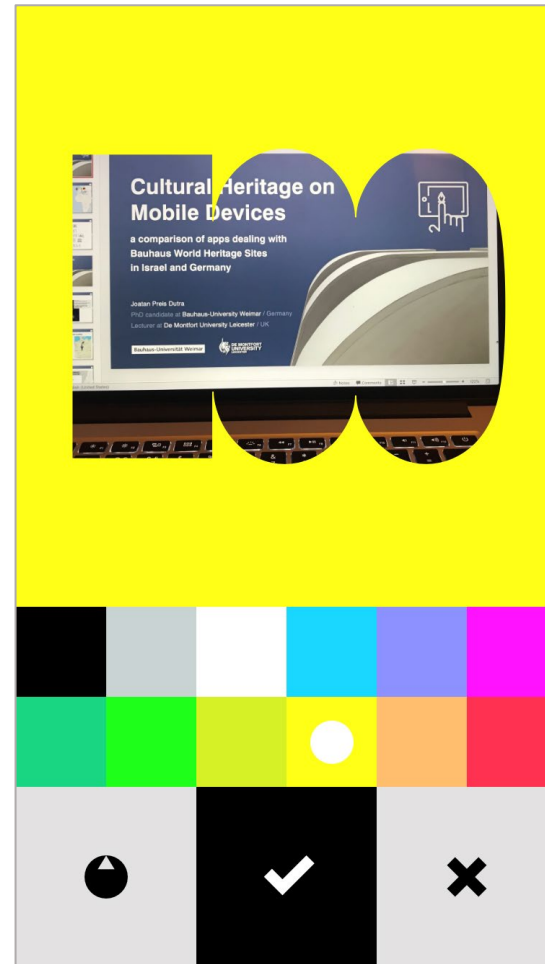
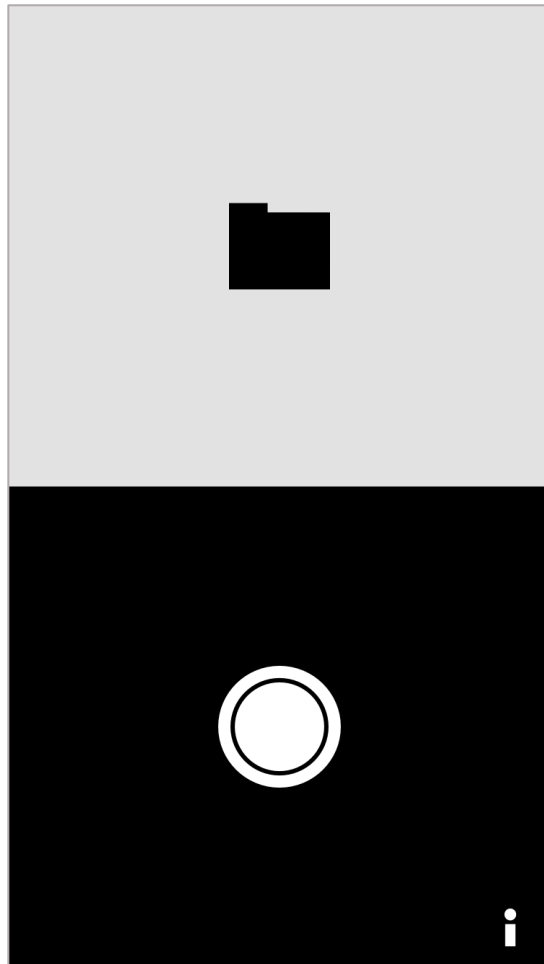
## ■ App: Bauhaus Dessau



- App: Bauhau-Archiv (Temporary)

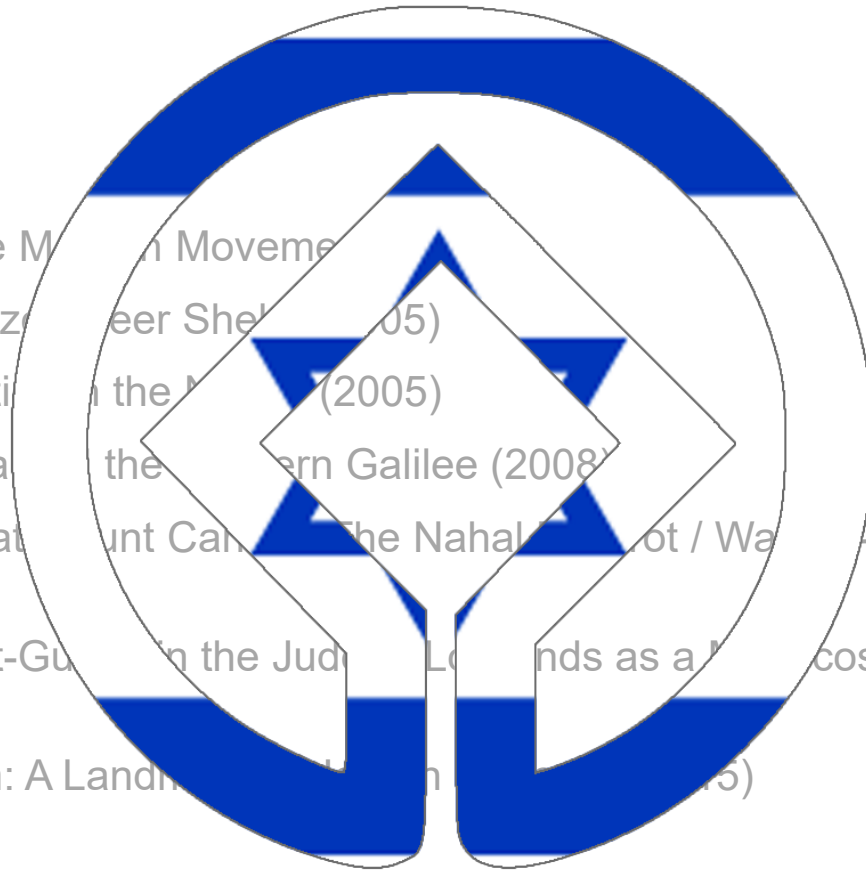


- App: I See Bauhaus (#Bauhaus100)



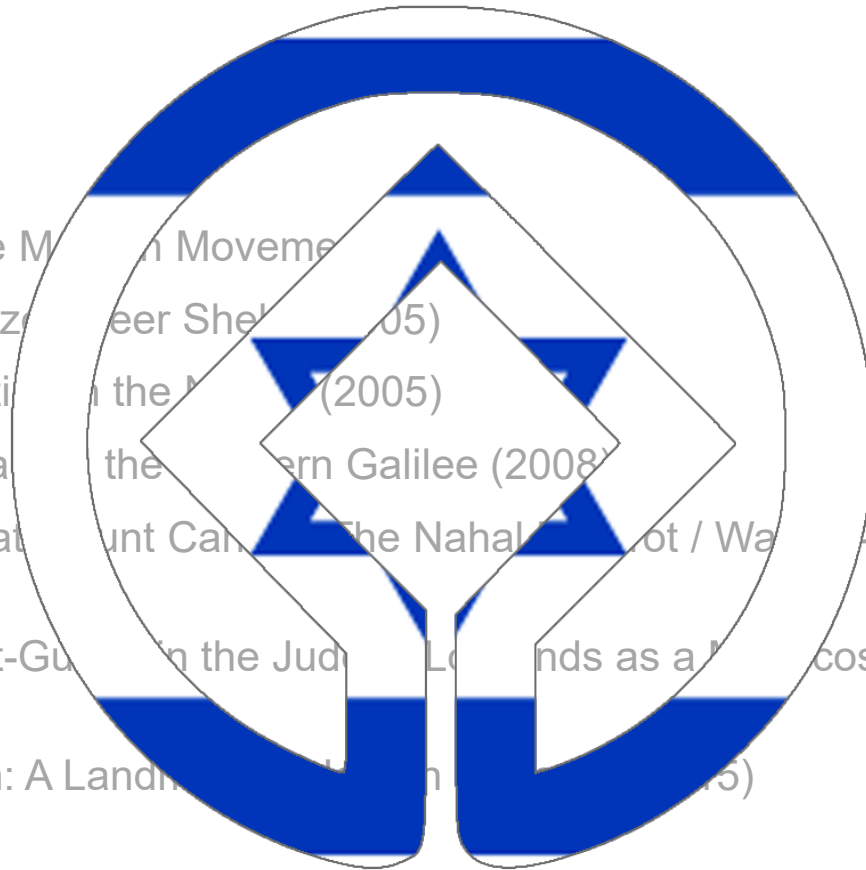
## ■ How about Israel?

- Masada (2001)
- Old City of Acre (2001)
- White City of Tel-Aviv – the Modern Movement (2003)
- Biblical Tels - Megiddo, Hazor, Beer Sheva (2005)
- Incense Route - Desert Cities in the Negev (2005)
- Bahá'í Holy Places in Haifa and the Western Galilee (2008)
- Sites of Human Evolution at Mount Carmel, The Nahal Me'ot / Wadi Mughara Caves (2012)
- Caves of Maresha and Bet-Guza in the Judean Lowlands as a Microcosm of the Land of Israel (2014)
- Necropolis of Bet She'arim: A Landmark of the Hellenistic Period (2015)



- Unfortunately were found 0 dedicated apps so far... ☹️

- Masada (2001)
- Old City of Acre (2001)
- White City of Tel-Aviv – the Modern Movement (2001)
- Biblical Tels - Megiddo, Hazor, Beer Sheva (2005)
- Incense Route - Desert Cities in the Negev (2005)
- Bahá'i Holy Places in Haifa and the Western Galilee (2008)
- Sites of Human Evolution at Mount Carmel, The Nahal Me'ot / Wadi Mughara Caves (2012)
- Caves of Maresha and Bet-Guza in the Judean Lowlands as a Living Cosm of the Land of the Caves (2014)
- Necropolis of Bet She'arim: A Landmark of the Hellenistic Period (2015)

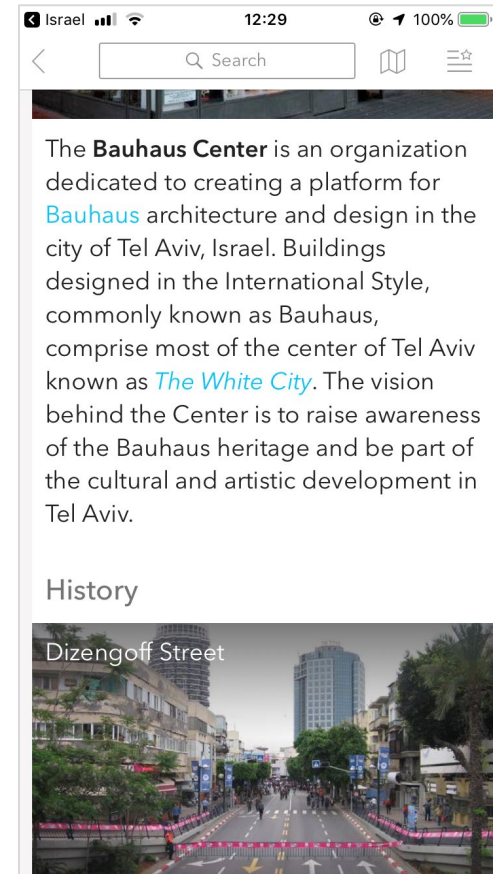
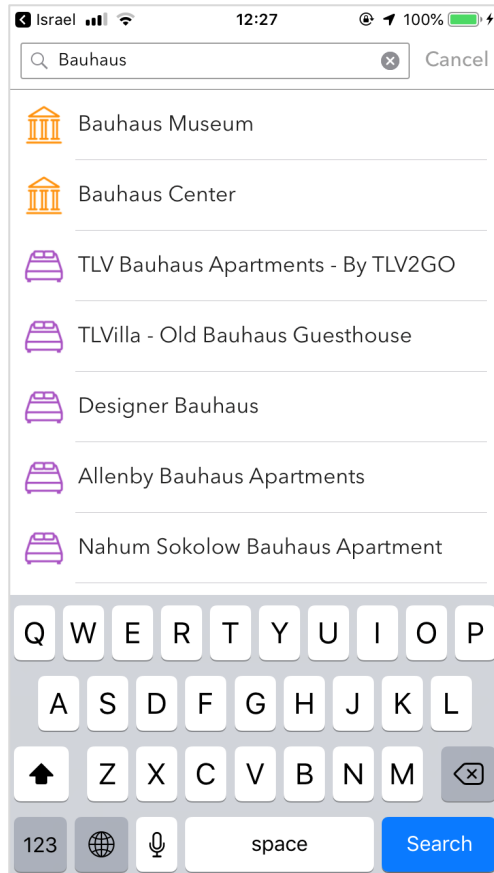
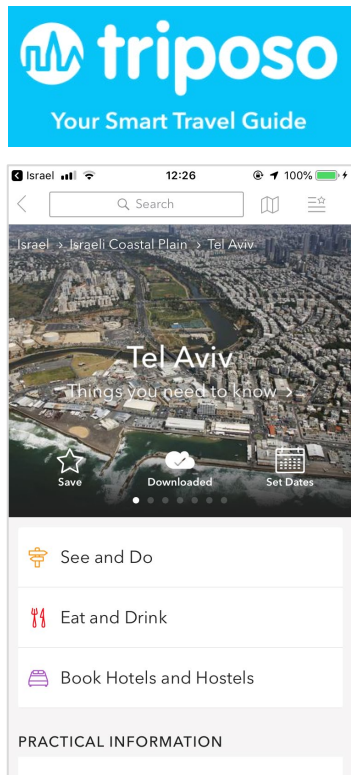


- Maybe in reason of searching for them in English (and in the UK)
- Just found “generic” touristic apps related to Israel and its main cities (but not White City or Bauhaus)



# Dedicated WHS apps in Israel

- From the related ones to Tel Aviv, “Triposo” (a tourism app available for the main cities in the planet) was the one that offered more information about the White City (based on Wikipedia)

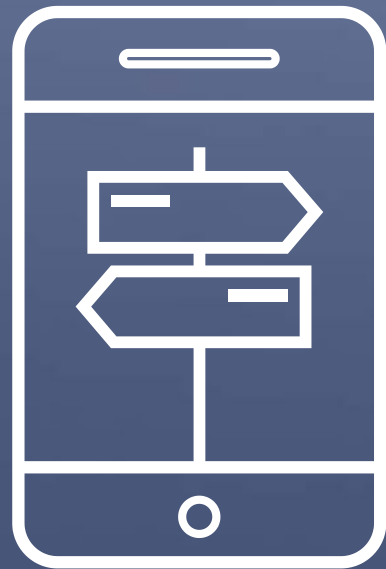




## Why it is important to develop a dedicated app?

- Control the narrative (no long texts from Wikipedia)
- Tailored information
- Interface designed for the tourism profile: age, content and languages.
- Offering features, such as: tours, maps, articles, etc.
- Offering services: guided-tours, tickets to museums, etc.

# Interface/Features Recommendations



## **Profile:**

- More than one building / monument
- Need to move through the city / directions
- Getting cultural information regarding each monument
- Access to further information / activities

## Layout

- **Place Content in one screen**

All the needed information is visually placed on the full screen, without the need to scrolling or dragging to access the content. [33] [28] [5] [26] [23] [13] [30] [8] [1] [34]

- **Providing search bar**

Specially if your app has a lot of content, it might help your user to find easier the desired information. [29] [11] [1]

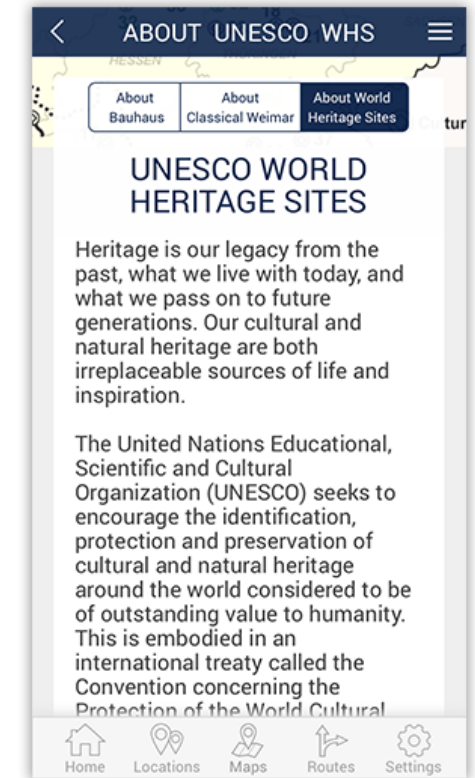
## Layout

- **Consistency between different sections**

The layout maintains the same visual structure when accessing different content sections of the App. [28] [5] [31] [26] [35] [13] [29] [11] [8] [20] [1] [21]

- **Orientation: provide session title**

Let the users know where they are inside your structure. [11] [1]



## Navigation

- **Number of taps to achieve information**

One of the main advantages of developing a dedicated app is to go direct to the point. It is best if you don't need to do more than 3 taps to get the desired information. [11]

- **One Level Navigation Menu**

When planning your content, try to optimize it in a way to avoid tapping/clicking several times to get the content. [33] [35] [30]

## Navigation

- **Items in the main menu**

Do not overdo your main menu. A good suggestion is to put up to 5 items in the main menu. If your app needs more features, try including a “hamburger” menu



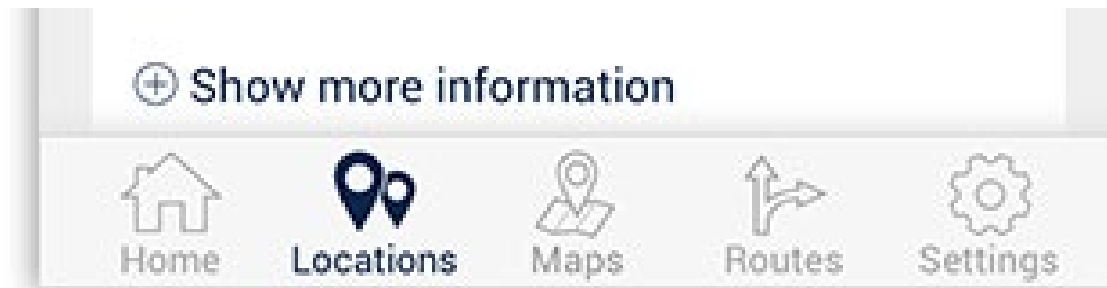
with the secondary features and settings.



## Navigation

- **Self-explanatory menu**

Use words that translates well the sections presented in your main navigation. Don't assume the user has any previous knowledge about your content. [33] [10] [31] [26] [30] [11]



- **Always visible**

Don't hide the main menu in sections of the app. Being always visible increases the usability. [7] [20] [1] [21]



## Navigation

- **Enable gestures**

Beyond common gestures as scrolling, the app also offers other interaction gestures, such as swapping, dragging, pinching, etc.

- **Presence of *Back* button**

This can be signed just as an icon, or as a “back” text, or even displaying the previous section name. Despite the Android smartphones have a “back” button on its physical device, this feature addresses just to the presence of a back button on the app interface.

[1] [34] [21]



## Design

- **Limited user of colours**

The app limits itself up to three different colours, including the background. [18] [31] [26] [32] [23]  
[13] [29] [11] [1] [34]

- **Simple design**

Simple design is reinforced by low use of colours, white space and limited graphic additions, use of margins and spaces. [33] [5] [26] [32] [35] [13] [29]

## Design

### ■ Use of icons

The presence of icons to reinforce an information, as main navigation or inside content.

[33] [7] [26] [32] [17] [35] [23] [13] [22] [19] [29] [25] [30] [8] [12] [34] [21]



### ■ Space between buttons or other clickable items

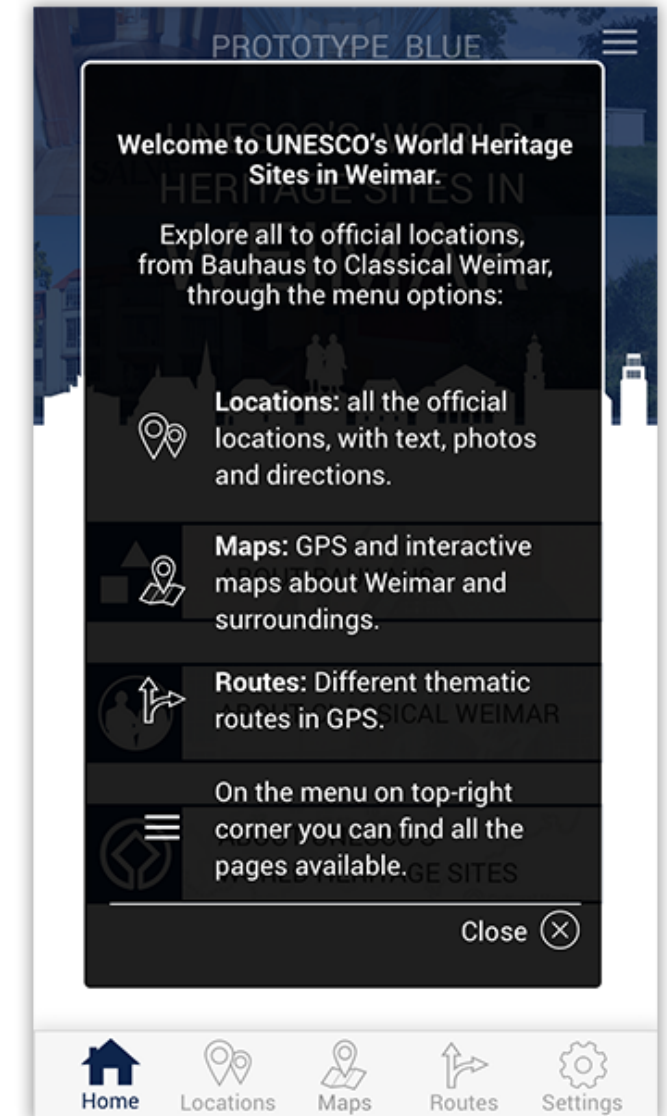
Consider the size of the fingers and leave a reasonable space between clickable items. [7]

[24] [5] [18] [31] [23] [19] [30] [8] [1] [34]

## Content

### ■ Information at start screen

When the app is opened, an introductory or explanation text is presented. Info at start screen. [3] [10] [22] [25] [11] [2]

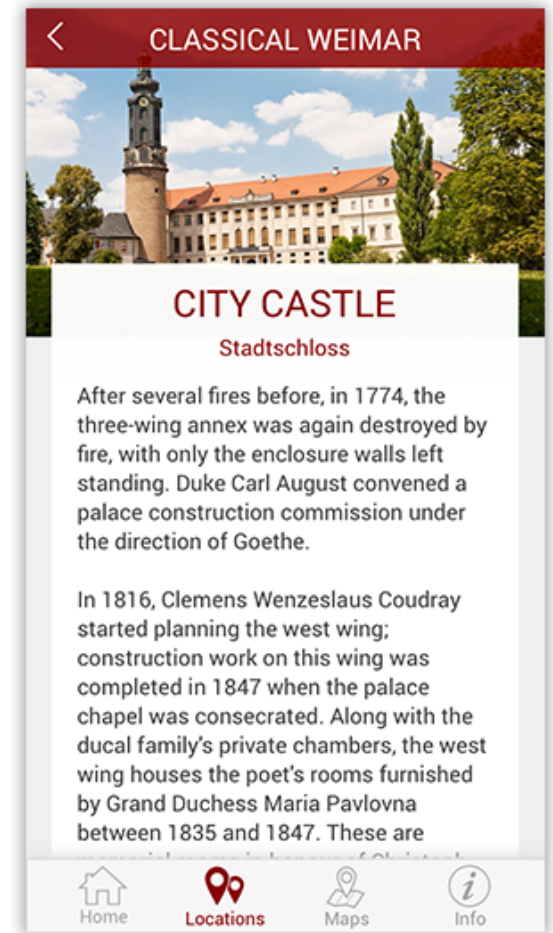
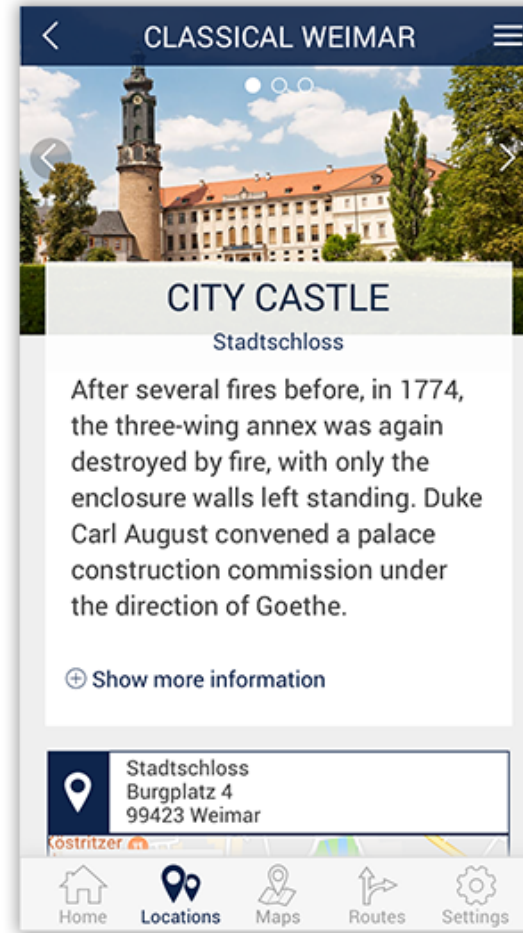


## Content

- **Use short text**

Try to use no more than two paragraphs of text referring/explaining the WHS, in order to avoid generating vertical scrolling. Offer to “click/tap” to see more text, if it is the case. [33] [28] [26]

[35] [13] [8] [20] [1] [34] [21]



## Content

- **Provide action feedback**

The app clearly shows on its interface a visual feature regarding an activity, such as section highlight or downloading bar, as example. In some cases, confirmation before deleting/uploading. [33] [7] [35] [29] [25] [12] [1]

- **Provide share options**

The possibility to share an information by e-mail, social networking or other communication channels can be a plus.

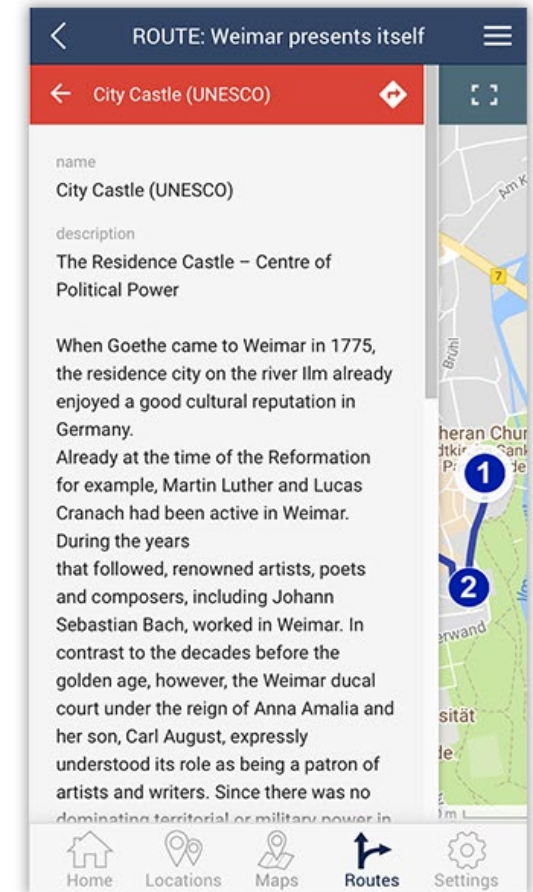
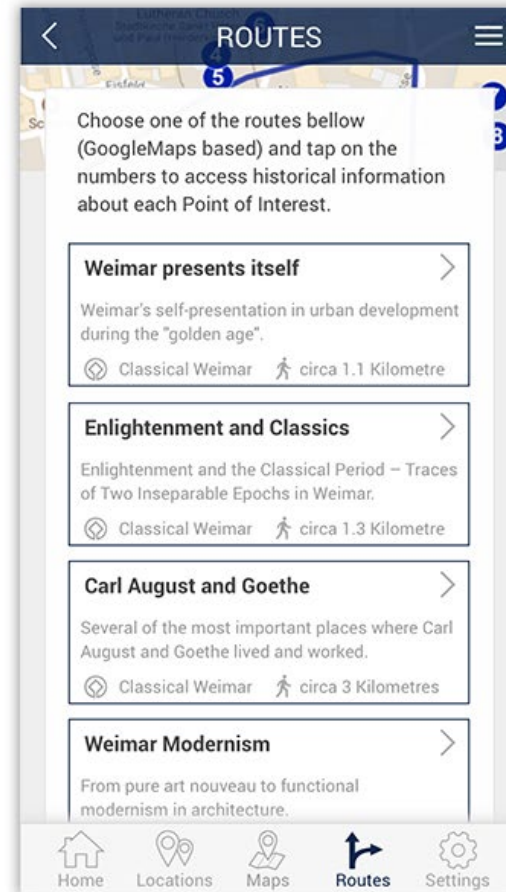
- **Prevent information loss**

When back from a section, the app presents the previous information without any loss, especially on multi-levels content. [33] [35] [29] [11] [2] [20]

## Content

### ■ Tours / Routes

When your target is spread in different locations, offering a tour could be a great feature. Try to provide even different tours, varying in length, time and topics. [6] [15]



## Content

- **Tactile feedback**

Clickable buttons with tactile feedback or sound helps the user to understand the actions, specially if you are designing for elderly audience. [7] [31] [30] [34]

- **Considering surrounding environment.**

Before including audios and videos, consider how your users going to use your app, while walking between locations. [3] [22] [25]

- **Provide notification of location-based.**

In some cases, you can active a notification based on GPS location, in case your app is designed to not being used on all the time. [3] [27] [14] [16]



## Content

- **Use of visual clues for visited POI.**

If your app has several locations, it can be a good idea to show visually the already visited locations or sections. [17] [14] [1]

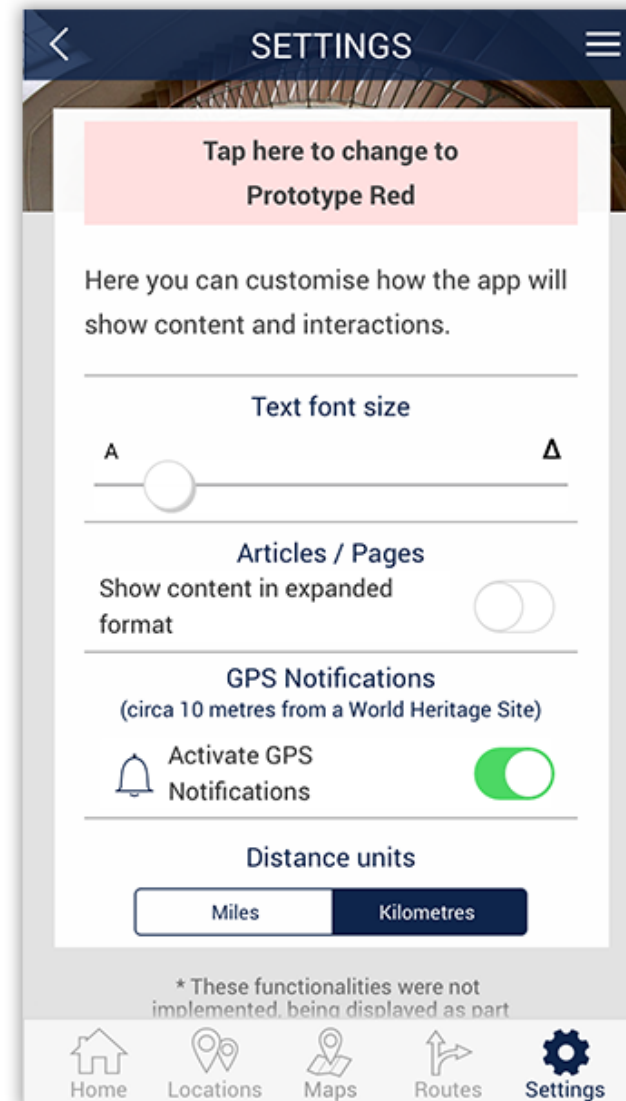
- **Large screen font / optimal size.**

Try to offer the possibility to change your font-size on menus and texts, specially if your audience includes elderly people. [7] [24] [28] [5] [31] [1] [34] [23]

## Content

- **Allowing personalization / configuration.**

Fonts, GPS notifications, Expanded/Contracted content, etc. Whatever your content offer, offering customization may help the user to have a better experience. [35] [4] [29] [20] [34]



## Features and Media

### ■ Use of Aesthetics graphics / Photos

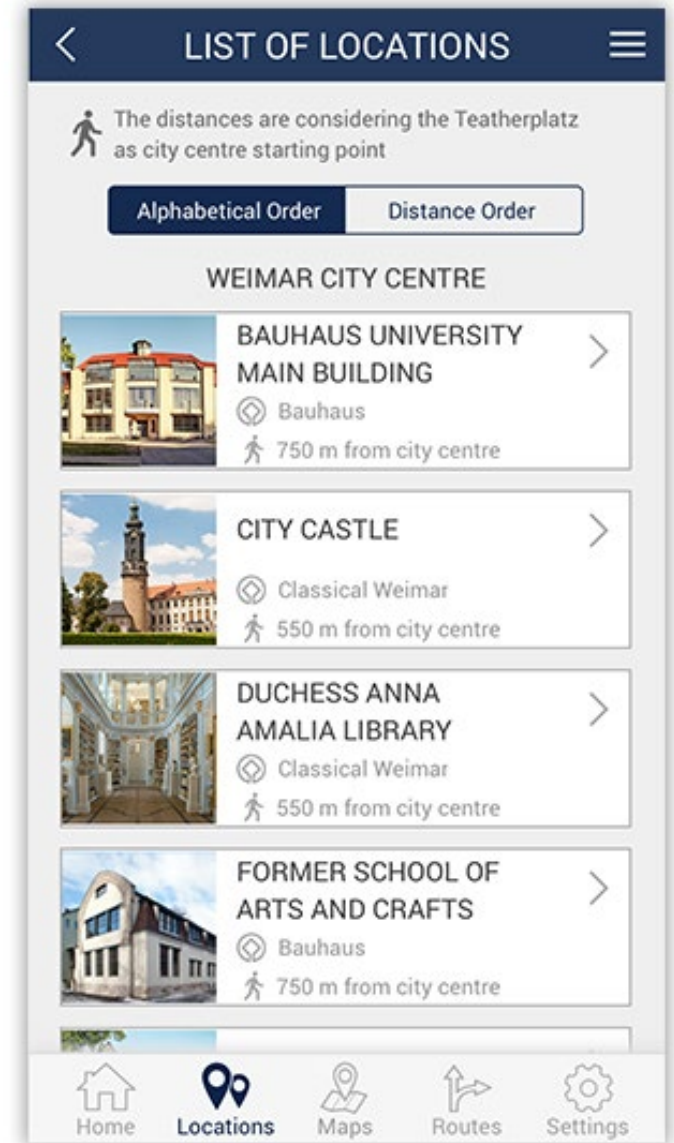
The use of images/photos reinforce the content and makes sure that you are in the right place. The use of images also helps to create a more pleasant information. [18] [26] [32] [17] [4] [13] [19] [30] [8] [12] [1] [34] [21]

### ■ Use of Augmented Reality

If the app idea allows it, why not offering an AR option? Just have in mind that AR normally consumes more battery. Plan short AR interactions. [17] [9]

### ■ Video/Audio

Offering media in video or audio formats can be tricky, if your user is using the smartphone without phones while walking in the city.



## Mobile OS

- **ALWAYS go for both most popular OS**  
At least offer your content equally for Android and iOS devices.



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Thank you!

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# Cultural Heritage on Mobile Devices



a comparison of apps dealing with  
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