

# Suomenlinna Mobile Guide

Concept Descriptions



**TIETOTALO**

TIETOTALO INFOCENTER OY  
HTC Keilaniemi Keilaranta 17, 02150 Espoo  
Rovakatu 17, 2 krs. 96100 Rovaniemi

Y-tunnus 1008465-8  
[www.tietotalo.fi](http://www.tietotalo.fi)

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# 1. About this document

This document forms a concept documentation together with the commented and visualized models in Figma (<https://www.figma.com/file/3pCpmtitRZwMJ46rNVPJ1f/Suomenlinna-Mobile-Guide-V1-shared?node-id=0%3A1>). This document does not describe alone all the required functionalities of the concept but focuses more in the fundamentals and main use cases of the concept. Some detailed functions can be found in the commented and visualized models only.

This document is not a technical specification, but it highlights some technical cornerstones that must be met in the implementation of the service.

## 2. Mobile Guide in Brief

The main goals of Suomenlinna Mobile Guide are:

- Perfecting Suomenlinna visitor's experience
- Increase awareness about the services and sights Suomenlinna has
- Increasing the average purchase per visit by introducing service highlights
- Encouraging visits even when the visitor has not much time to use
- Encouraging planning and browsing the services in advance
- Improving communication about available accessible routes and services
- Communicating rules and regulations in a soft way
- Improve security by highlighting and informing about dangerous places

This service should work in <https://guide.suomenlinna.fi> address.

Suomenlinna Mobile Guide is a mobile-first progressive web app (PWA). This service works as a responsive web service that takes advantage of the new possibilities of modern web browsers. These possibilities are such as push messages and cached data using service workers. This technical approach improves distribution and usage of the application as the application is in use immediately after opening the web site.

Suomenlinna Mobile Guide has four main functions:

1. Navigate
2. Browse
3. Plan
4. More (additional information)

**Navigate** is a map-based section that pinpoints all the services and sights of Suomenlinna. User can zoom in and out the map, see her own location on the map and show/hide her own plan. User can select any service or sight on the map and read continue to the info card of the selected service.

**Browse** is a catalogue-based view to the services and sight of Suomenlinna. It gives information about the ferry schedules, events and services in a list view.

**Plan** view offers recommended routes to be shown on the map (such as accessible route). User can also build her own Suomenlinna experience by selecting the date of the visit, ferries and services. Planner calculates the estimated duration and walking distance for the visit based on the selected services. **Planner is an option that is estimated separately and may or may not include to the main project.**

**More** is an extra menu that includes information about Suomenlinna as a location, tourist information, rules and regulations and FAQ.

Suomenlinna Mobile Guide uses cached data and it can be used also when no data connection is available. **Offline mode** uses limited functionalities as, for instance, calculating directions is not possible.

### 3. Technical Cornerstones

Suomenlinna Mobile Guide is planned based on certain technical cornerstones that are verified based on the precondition that this service works as a progressive web app.

Suomenlinna Mobile Guide can be built with any development frameworks that support the PWA functionalities described in this document and the visualized models. However, the technical verification of the concept has been done only with React.

Map functionality is based on Mapbox's ([www.mapbox.com](http://www.mapbox.com)) Map SDK for React Native (<https://docs.mapbox.com/help/glossary/maps-sdk-for-react-native/>, <https://docs.mapbox.com/help/tutorials/use-mapbox-gl-js-with-react/>).

Certain functionalities such as routing are not supported in an offline mode. The application informs user about the offline mode and disables the map-based functionalities that are not available. This means functionalities such as navigational instructions to any location and distance and duration of any planned route. However, the whole catalogue of services and sights including opening hours, info card content and ferry schedules should be available in the offline mode.

Main offline features:

- Cached service and sight catalogue
- Map tiles of Suomenlinna, Lonna and Helsinki market Square / zoomable map
- Custom layers/vectors (inhabited, closed and dangerous areas)
- Interactive map (map markers open basic information and user can proceed to info cards)

- Planner (adding services, sights and ferries to the plan – no estimated duration and distance nor visualized route on the map)
- Ferry schedules
- Map filters (for example "show all museums")
- Own location (location service of the OS required)
- Currently open places (open places on a selected day) (opening hours)
- HSL open API for ferry schedules (custom solution for water bus)
- In-app notification for ferry schedule (notification 30min before selected ferry)
- Showing any location or sight on the map including own location
- Cache the routes that the user selected or built in online mode

### 3.1 Content Management Requirements

The Governing Body of Suomenlinna has a custom-made service for opening hours running on **Heroku development platform**. This opening hour service includes categorized vendor information and it returns opening hours as a JSON file. This service should be developed to meet the content requirements of the mobile guide app. This means that the current opening hours service will have a separate CMS (such as Wordpress) that is used to manage the content described below or the opening hour service itself is developed so that this content can be managed directly there.

Localization will cover only English and Finnish in the first place, but more languages may be added later.

In general, all the textual information of the service should be editable in the CMS. Following information should be editable in the CMS:

1. Intro
  - a. Adding / removing steps/views
  - b. Editing background image, icon, title and description
2. Info Pages
  - a. Adding information pages with rich text such as "Tourist information", "FAQ" and "Privacy Policy".
  - b. Editing title, rich text and optional photo
3. Content of modals and toasts
  - a. The concept includes multiple modals and toasts that include text that should be editable
4. Water Buss schedule
  - a. Mobile guide uses HSL API to show ferry schedule. This data does not include water buss schedules. CMS should have a way to manage water buss schedule.
  - b. More info about the schedule requirements: <https://www.it-line.fi/eng/suomenlinna-vallisaari-lonna/timetable-suomenlinna/>
5. Recommended Routes
  - a. Coordinate based path (build on a map view)
  - b. Editable: title, icon, description

6. Service Highlights
  - a. Title, icon, small text, short description, long text
7. Services and Sights
  - a. Name
  - b. Description
  - c. Category (current Heroku based service)
  - d. Photo (optional)
  - e. Link URL
  - f. Opening hours (current Heroku based service)
  - g. Coordinates
  - h. Average duration of visit (used to calculate the estimated duration of a visit in Suomenlinna)
  - i. Contact information
    - i. Phone, email
    - ii. Address
  - j. Events (current Wordpress based service)
  - k. Ability to add custom pages to the Info Card
    - i. For example: “Menu”, “Catering”, “Other Services”, “History of Russian Era”, “History of Swedish Era” and “About the Architect”
    - ii. These pages include:
      1. Photo (optional)
      2. Title
      3. Rich text

## 3.2 Accessibility

The Governing Body of Suomenlinna is a public organization that is legally obligated to offer digital services that meet the [accessibility requirements](#). These requirements are respecting the Web Content Accessibility Guidelines (WGAC) 2.1 level AA (<https://www.w3.org/TR/WCAG21/>). The technical implementation of Suomenlinna Mobile Guide has to meet these accessible guidelines.

## 3.3 Responsive web service

This service works as a responsive web service and scales to desktop sized screens. Desktop version has the map view located in the right-hand side of the screen and textual content will appear on the left. The content views on the left will respect the mobile views with some minor changes shown in the visualized models.

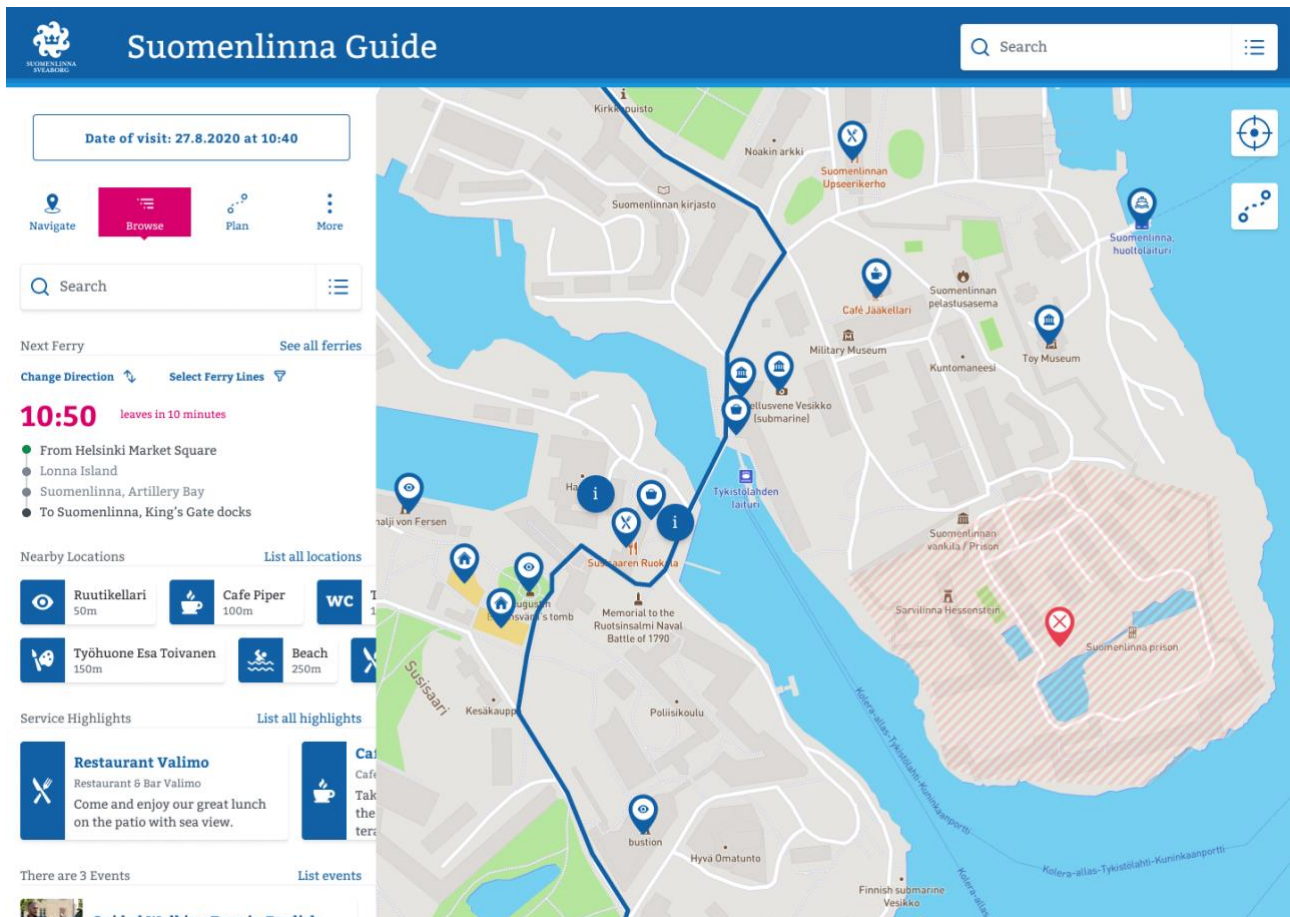


Figure 1 Visualized desktop version of the Suomenlinna Mobile Guide

## 4. Splash Screen, Intro and UI tips

The app will load a splash screen. The logo of the splash screen is animated to scale down and move to the icon square of the first intro screen.

Intro screens are swiped from right to left and back. Privacy Policy opens on the intro screens so users can access it before entering to the service. Possible contents dialog for the cookies that are not necessary for the service will be presented in this view.

The user will be directed to the “Navigate” view by selecting “Continue”. The user will be shown an UI Tips view as an introduction the first time she uses the service. This introduction will give short info of the functionalities and the main sections of the app. User can close the introduction at any time.

## 5. Navigate

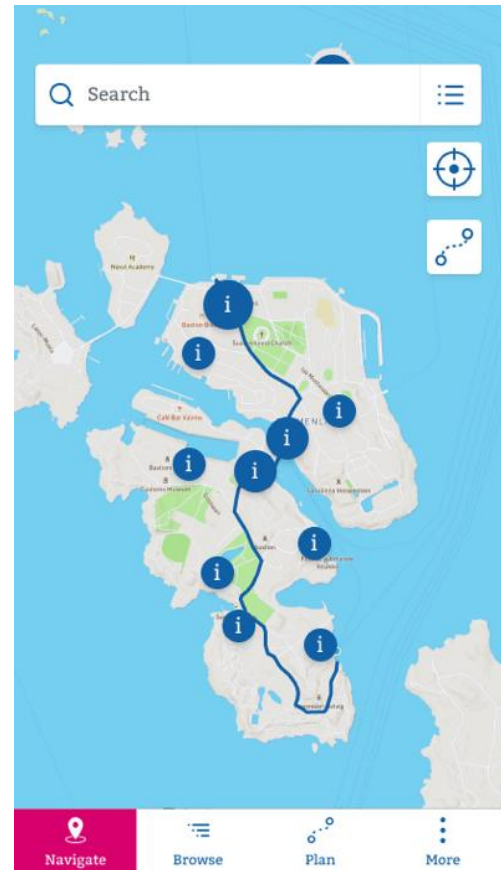
The branded header will be shown for 1 second every time user arrives to the “Navigate” view. The branded header will then move up and disappear to give more space to the functionalities.

“Navigate” is the main section of the app. It shows the entire Suomenlinna and Lonna islands by default and clusters all the services and sights when necessary. When the user interacts with the map her first time a soft-ask opted-in dialog about the location data will be shown. User may continue using the service without giving a consent to use her location data. This will disable functionalities such as calculating distances and walking duration.

The map is centered based on the location of the user by default. The location marker is animated as described in the visualized models.

When user presses the “Plan” button and there is no plan in the planner a modal about the planner functionality is shown. User can proceed to the planner or continue using the map.

When user taps the search bar, she is directed to a separate search view and the input field is activated as the visualized model shows. User can edit the filters in the map view.

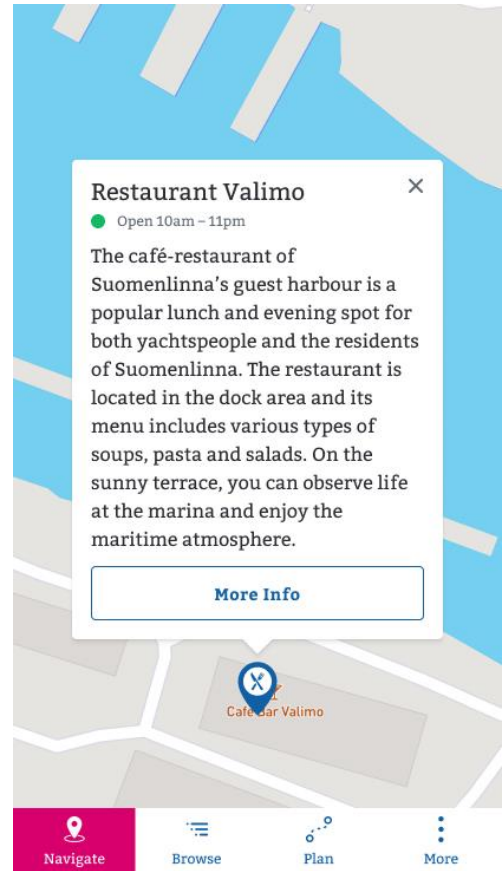




## 5.1 Map markers

Map markers are interactive and when tapping / clicking them an info window is shown including the name of the location, type or opening hours and a description. User can close the window or move to the info card of the location. The description text is the same that is shown on the info card of the service or sight.

Currently visualized markers: Coffee, restaurant, church, museum, sight, shopping, art and culture, swimming, WC, info, warning, accessible, blue route, inhabited building, closed area, ferry. These markers should be linked/added to the current category information of the opening hours service in Heroku.



## Categories

Position ↓	Title	Actions
	<input type="text"/>	★ Create
1	Matkailuneuvonta	Enabled Edit Remove
2	Museot	Enabled Edit Remove
3	Opastetut kierrokset	Enabled Edit Remove
4	Ravintolat & kahvilat	Enabled Edit Remove
5	Ostoksia ja taidetta	Enabled Edit Remove
6	Muut	Enabled Edit Remove
7	Lonnan palvelut	Enabled Edit Remove

Figure 2 Category management in the current service

## 6. Search

Search include the following filters that apply also on the map view:

- Accessible Services Only (show only easy to access services)
- Open services only (show only services open on the selected day)
- Art & Culture (show art and culture related services)
- History & Education (show only historical and educational locations)

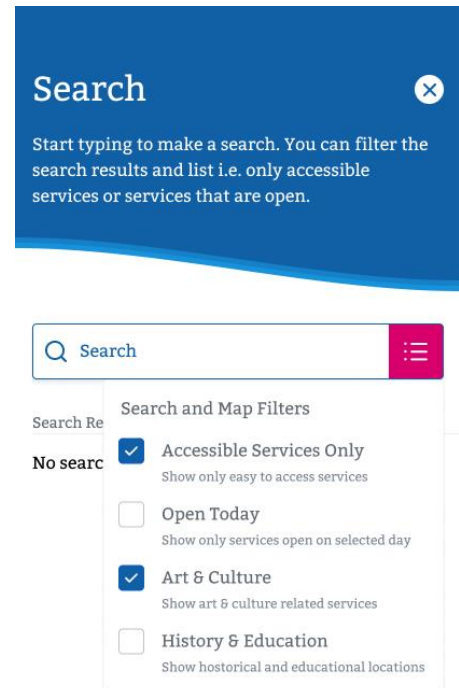
Filters are unchecked by default and all the services and locations are shown on the map, in search and in the catalogue.

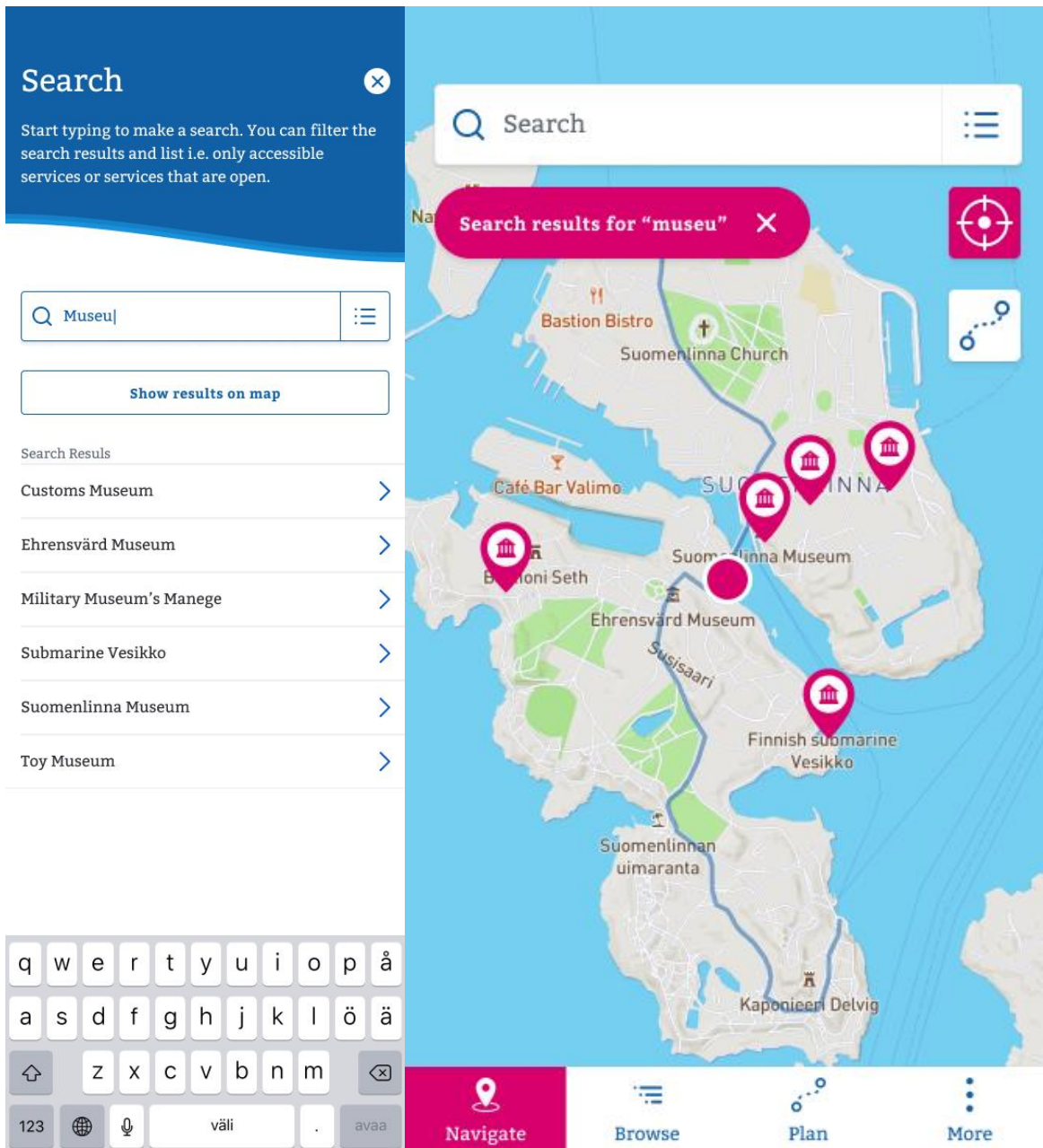
Filters work with AND operator.

1. If you select “Accessible Services Only” AND “Arts & Culture” the map, search and catalogue will show only accessible art & culture related services and locations.
2. If you select, in addition, also “Open Services Only” the map, search and catalogue will list only accessible art and culture related services and locations that are open on the selected day.
3. If you have everything selected on the list the map, search and catalogue will show only accessible art & culture + Hisotry and Education related services and locations that are open on the selected day.

If user has changed the date of visit “Open Today” will show the selected day. For example: “Open on October 27th 2020”

When user selects the search input field a separate search view will be shown and the input field is activated. Search filters search results while user is typing. Search results can also be shown on a map. The map view will have a tag indicating that is showing a filtered view. The map view will return to a normal status when the tag is removed. This same logic works with the catalogue itself: when browsing i.e. museums in the catalogue all the museums can be shown on a map and a filter tag will appear on the map. This is presented in the visualized models.





Images: Search results are listed while user is typing. Results can also be shown on the map. A separate tag is shown on the map to indicate that user is watching a filtered view.

## 7. Browse

User can change the date and time of visit in the browse and planner views. Ferry schedules, events and opening hours are shown based on this selection.

Browse view lists the next departing ferry. If the service knows the location of the user, the next direction of the next departing ferry is selected based on it (if the user is in Suomenlinna, the direction is selected from Suomenlinna to Helsinki Market Square). If locations data is not available, the default direction is shown (from Helsinki Market Square to Suomenlinna).

Next Ferry See all ferries

Change Direction Select Ferry Lines

**10:50** leaves in 10 minutes

- From Helsinki Market Square
- Lonna Island
- Suomenlinna, Artillery Bay
- To Suomenlinna, King's Gate docks

User can select which ferry lines are used in the element. By default, only HSL Ferry and Water Buss are listed.

“See all ferries” takes user to a separate view that lists all the ferries in a tab based on the direction.

**Nearby Locations** is based on based on a location data and a radius of 100 meters. The radius should be changeable in the CMS. This function lists 10 services and sights closest to the user. If there are no 10 services within 100 meters from the user the services and sights further than 100 meters are also included. If there is no location data available. The user will be informed about the service and instructed to allow location services.

Nearby Locations List all locations

Ruutikellari 50m Cafe Piper 100m WC 100m

Työhuone Esa Toivanen 150m Beach 250m

Nearby Locations

You can see nearby locations when you allow us to use your location data. We handle your data anonymously and securely.

[Allow Location Data](#)

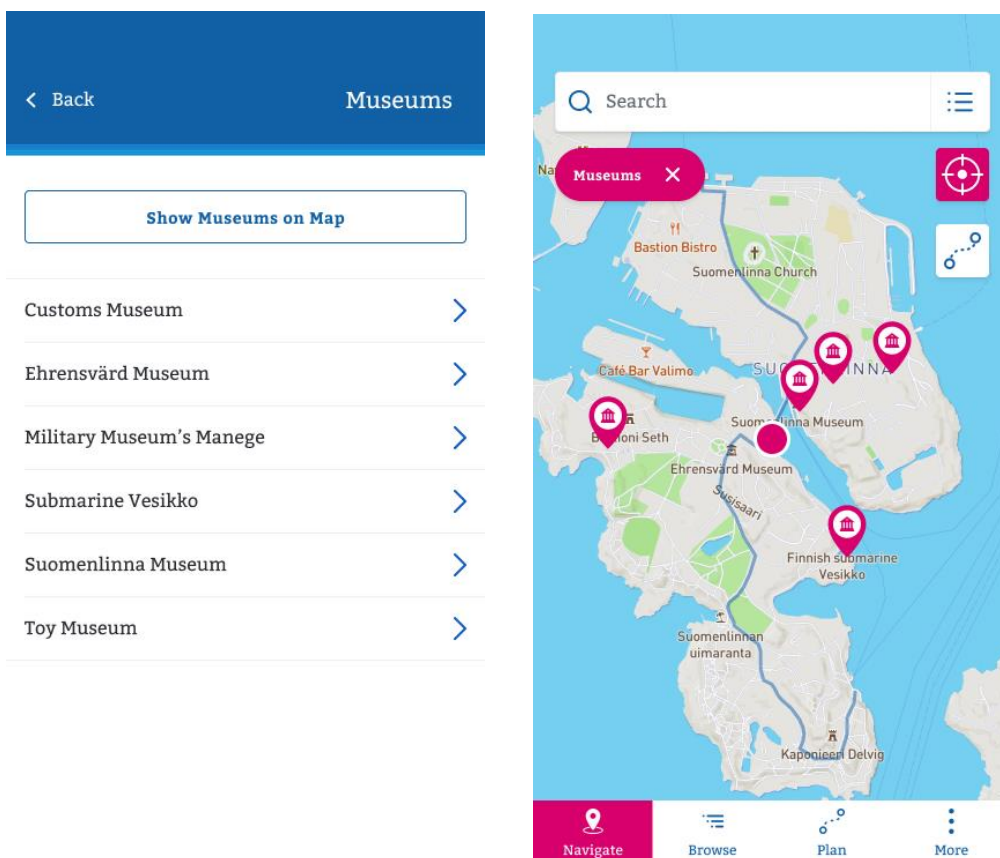
**Service Highlights** are listed in the Browse view. They are meant to increase the average purchase and to give an inspirational aspect to the services. These highlights can be combinations of different service providers (i.w. “get a free dessert when eating after a teathre play”) or they can be highlighting any specialities of the service providers.

- No location data: Every time the view is accessed the system selects randomly 5 service highlights to be presented.

- Locationdata available: Every time the view is accessed the system lists 5 closest service highlights.

**Events:** Events are listed based on the selected date and time. Next starting event of the day is shown as a event card and all the events can be accessed by selecting “List events”. Events are managed in Suomenlinna.fi Wordpress platform. There is currently no link between vendors in the Opening Hour service and Wordpress platform. This link is required in order to list events on the info cards of the vendors. This can be done, for instance, with a custom field that holds the ID of the vendor.

**Service & Sights** catalogue is a list of all the services and sights added to the service in an alphabetical order. When user browses any sub-navigation she is shown an option to list all the items of the selected category on a map.



## 8. Ferry Schedule

HSL Ferry and HSL Service Ferry schedules are read from the HSL API. [Read more about HSL Open Data](#). HSL API does not include water buss schedules and it should be managed and editable in the

content management system. More info about the schedule requirements: <https://www.it-line.fi/eng/suomenlinna-vallisaari-lonna/timetable-suomenlinna/>.

Ferry schedules should be cached and usable also in the offline mode.

## 9. Plan

Planner functionalities are an option and not necessarily included to the first version of Suomenlinna Mobile Guide.

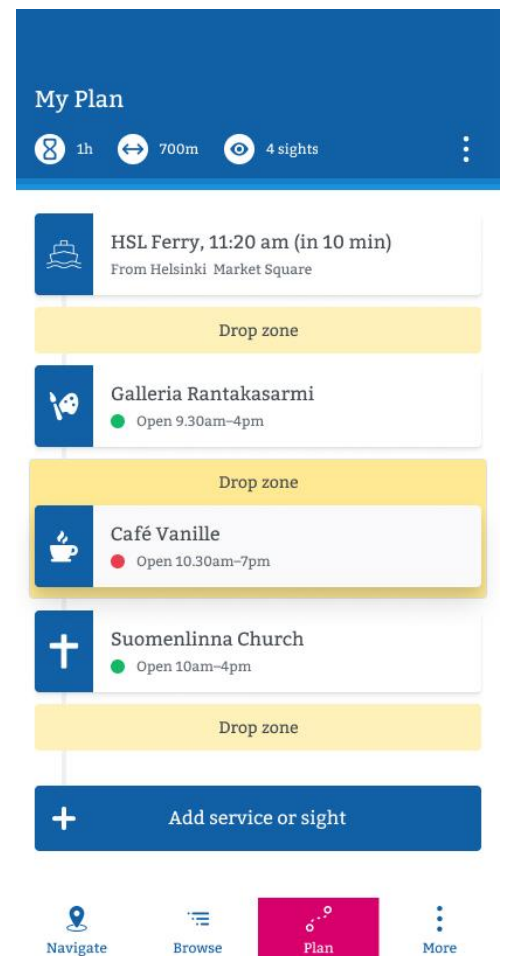
User can plan her own Suomenlinna experience in the planner view and share the plan with her friends. User can select a recommended plan that is shown as a separate color on the map. Recommended plans are just (coordinate based) routes and they do not include any pre-selected services or sights. There should be a way to add, remove and edit the routes in the CMS. The routes are as follow:

- Blue route (default route shown as blue on the map)
- Accessible Route (when selecting this the search filter “Accessible Services Only” is turned on, shown as a green path on the map)
- Scenery Route (shown as a green path on the map)
- History Route (shown as a green path on the map)
- Art & Culture Route (shown as a green path on the map)

User start planning by selectin a Ferry to Suomenlinna. User can skip this step by selecting “I am in Suomenlinna”. If there is access to the location data and the system knows the user is already in Suomenlinna this step is skipped automatically.

Tapping service and sight cards opens and closes the description text. “More Info” takes user to the info card of the service or sight. User can remove a service or sight from the plan by selecting “Remove”. Remove function will also appear when swiping the card left.

User can add services and sights to the plan by tapping the plus icon or the button “Add service or sight” in below. When adding a new service or sight to the plan the system will list nearby locations based on the earlier service or sight in the plan. For example, when the earlier selection is Suomenlinna Church the nearby locations are locations that are tagged to be nearby Suomenlinna Church. This can be calculated automatically based on the coordinates of the earlier service or sight or done by tagging locations manually in the CMS.

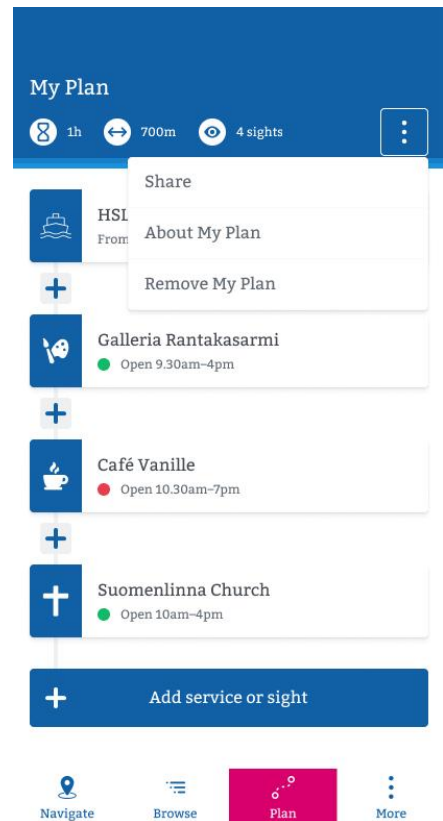


User can rearrange the plan by tapping a card long. This activates a drag and drop functionality will activate. User can then drag and drop the card to any drop zone.

User can share her plan as a URL in her own social media channels. Friends who click the URL will be redirected to the Mobile Guide and the plan view will open including the services and sights added to the plan.

User can remove the plan by selecting the extra menu and selecting “Remove My Plan”.

Planned route including selected services and sights is shown on the map in the “Navigate” view when selecting the planner button. The route and map icons are shown red (secondary color).



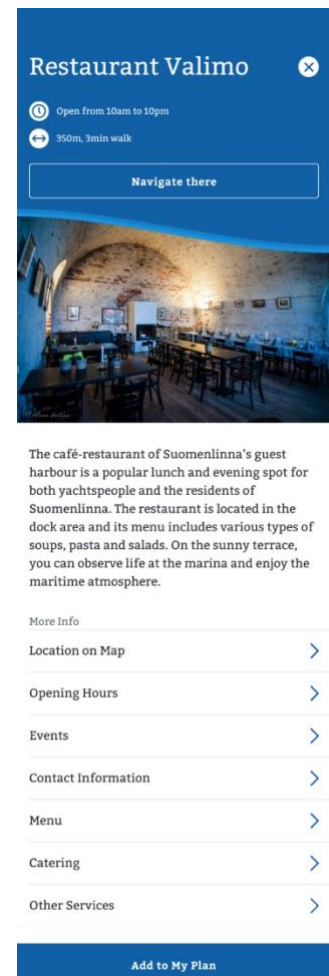
## 10. Info Card

All the services and sights have their own info card listing all the necessary information about the service/sight. Info card shows opening hours and distance and walking time from the user’s location. User can open the “Navigate” view with shortest walking route to the service or sight. Navigating functionality will add a filter tag on the map indicating that the user is using a filtered view. Map will return to the normal view when removing the navigation tag.

Info cards have an optional photo and a mandatory description. More info contains always “Location on Map” and services have also “Opening hours”, “Events” and “Contact Information”. Events are shown only when there are events linked to the service.

In addition to the mandatory content there should also be a way to add extra pages to the info card. These pages can contain historical or educational information of the sight or menu and information about catering. These pages contain an optional image, title and rich text and they are shown in the “More Info” list.

There is always “Add to My Plan” in the bottom of the info card. This button will add the selected service or sight to the planner. When there is not yet a plan and this button is pressed the step of selecting a ferry is skipped in the planner.



## 11. Notifications

Suomenlinna Mobile Guide will ask permission to send push notifications after the user has used the service for 2 minutes. This is done with a soft-ask opt-in modal. User can cancel or move on to accept notifications.

The Mobile Guide sends a push notification asking for feedback every evening to all the users that have used the mobile guide in Suomenlinna area during the day. This push notification will ask for feedback and it includes a link to a feedback form that opens in a web browser.

Suomenlinna Mobile Guide will also use in-app notifications to notify users about the ferry schedules. When user has added ferries to the plan the app will notify 30 minutes before the departure of the ferry. When tapped the notification takes user to the planner.

## 12. Visibility and NFC Tags

Starting points of the user journeys of the Suomenlinna Mobile Guide can be such as:

- Hotels in Helsinki
- Helsinki-Vantaa Airport
- Entering a service in Suomenlinna

These locations should have leaflets or other advertisements about the service including an NFC tag that takes the user directly to the service.

Suomenlinna services and locations should have leaflets, stickers or similar including a brief description of the mobile guide and an NFC tag that will open the info card of the location or service. This can be a sticker on a door or a stand on the floor that is visible when entering for example a restaurant or a museum.

It is good to notice that NFC tags work currently with all newer Android based phones and iPhone XS or newer iOS based phones.