# Nest Scheduler Redesign

—

ETHELIA LUNG – SPRING 2016

# INTRODUCTION

---

## 1. PROJECT BRIEF

—

With a great user experience in terms of both the physical thermostat and the accompanying applications, Nest's thermostat has become a great energy-efficient household solution.

The scheduler is an integral part of the thermostat's functionality, and as such, should be redesigned to reflect its importance.

## 2. GOALS

—

A web-based Nest scheduler application.

The scheduler should take into account the work day of a homeowner, and include features that facilitate an efficient and easy to use scheduling system.

## UNDERSTANDING

—

1. Basic research
2. Existing solutions
3. Feature set
4. System trends

## 1. BASIC RESEARCH
—

In general, users are unsure about the automatic scheduling, which is glitchy, and learning takes time.

**A user should be able to set their own pattern in addition to the thermostat's self-learning feature.**

At the end of the day, the algorithms are mechanical, and will only do so much for a user; thus the increased need for a good user experience in manual scheduling.

**Thus the increased need for a good user experience in manual scheduling.**

## 2. EXISTING SOLUTIONS
—

Albeit not directly related, the Sunrise calendar is a great solution for an easy to use tool that seamlessly integrates itself into a daily routine. Sunrise calendar is a popular, easy-to-use and streamlined calendar application for desktop and mobile. Both the desktop web application and the mobile applications are beautiful and clean, enhancing the user experience.

Sunrise Meet is a keyboard designed to take that experience a step further, by allowing users to efficiently schedule appointments directly through a designated keyboard, whereby they designate their availability to a second user, who either confirms or rejects the available meeting times.
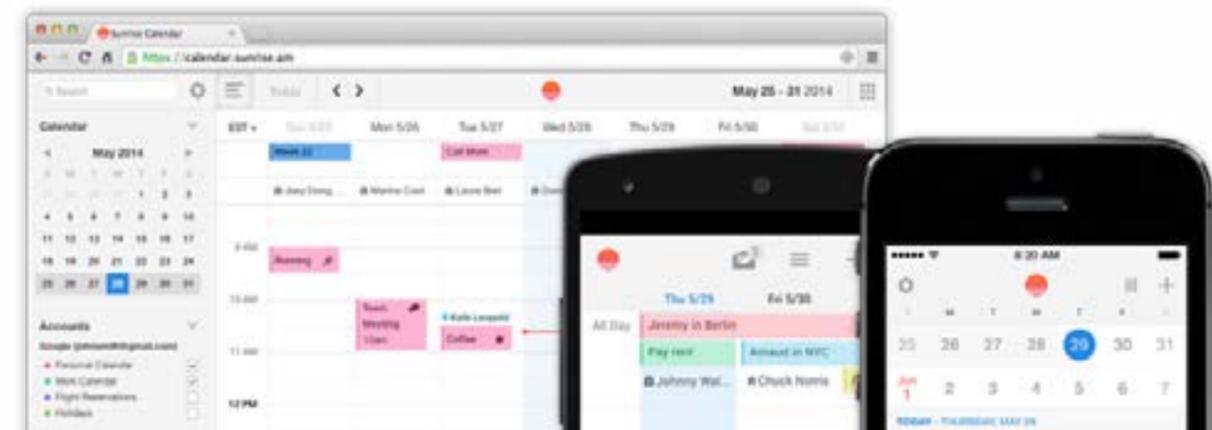
## 3. FEATURE SET
—

**A new feature set was devised based user needs:**

Retain add, modify, and copy/paste functionality

Treat the scheduler like how a calendar would be treated
    Repeated days/weeks/months
    Ability to pre-heat
    Location-based settings and alerts
    Temperature profiles (presets)

Energy saving indicator and summary

Family permissions

Automatic weather-based adjustments

Budget check

## 4. SYSTEM TRENDS
—

Visualising variables next to times is not a new concept.

In cases where time is presented as an independent variable, line graphs seem to be a popular solution, as the ups and downs of a variable can be seen to literally go up and down.
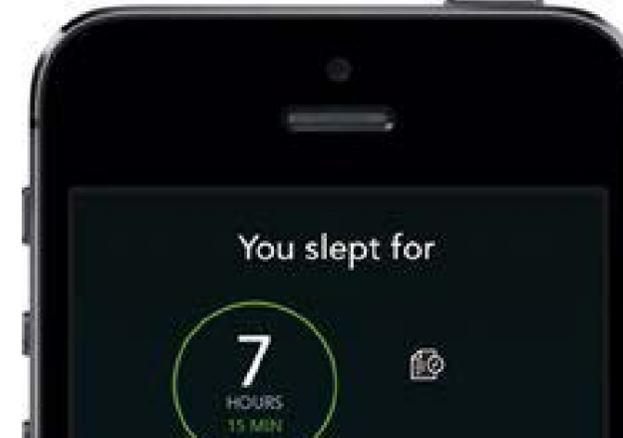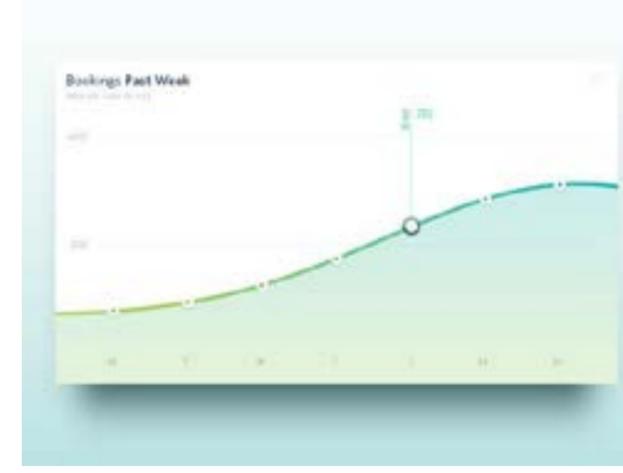
# IDEATION

1. Sketches
2. Wireframes
3. Mood & style

# 1. SKETCHES

—

With the feature set in mind, several different sketches were created in order to fulfil different foci:

**Function like a calendar**
Overview of schedule and associated temperatures

**Function like a dashboard**
View summaries of energy and budget savings prior to temperature setting

**Function like the physical hardware**
A radial style that simulates manual thermostat adjustment
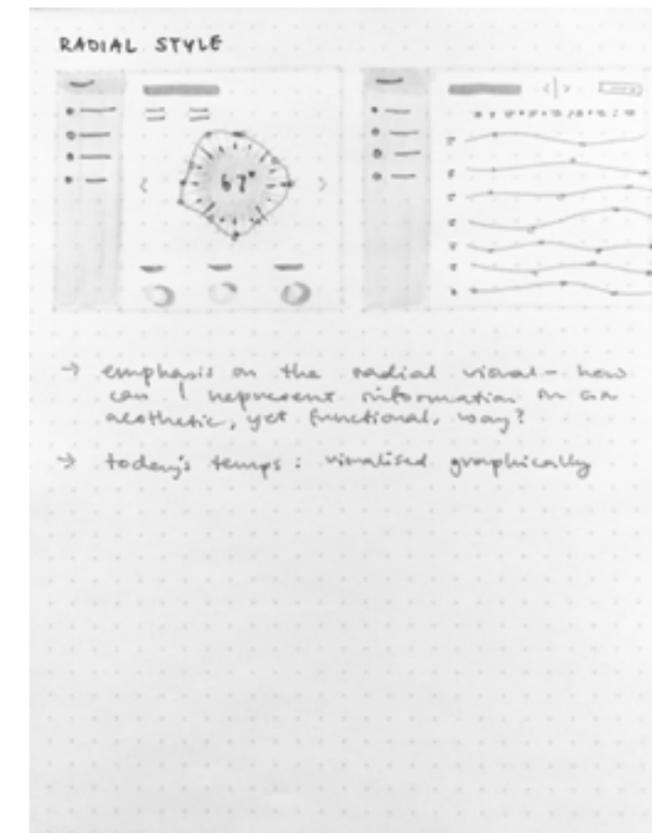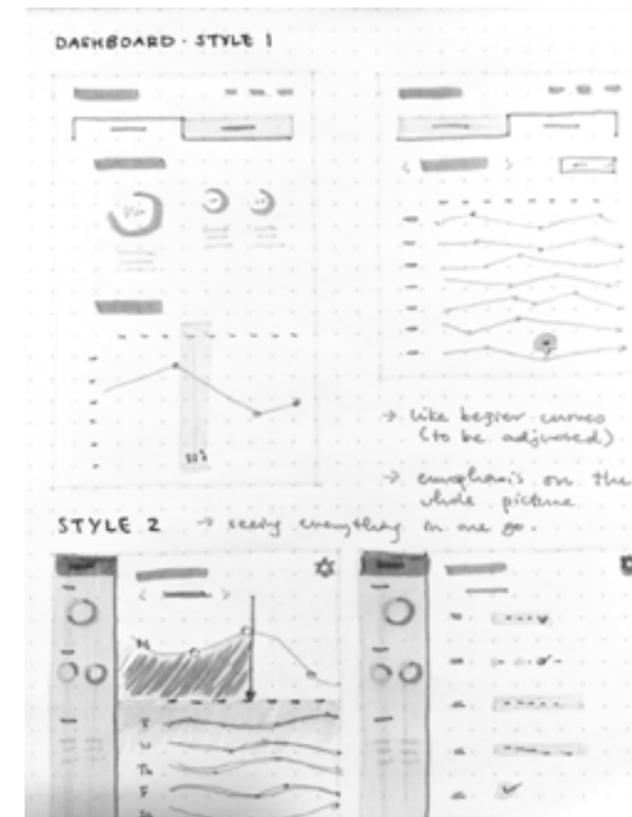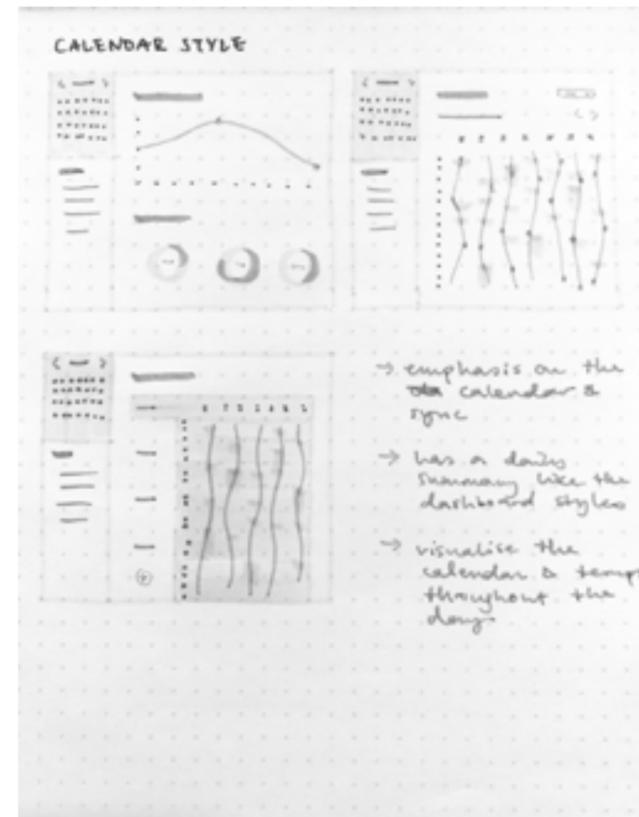
## 2. WIREFRAMES: DEFAULT

—

**1  Temperature bezier curve**

A curve that visualises temperature changes including pre-heating.

**2  Viewing options**

Compare your temperature curve with calendar events, the eco-friendly alternative, auto-weather adjustments, different units, and magnification.

**3  Calendar**

View temperature curves by date.

**4  Usage summary**

Compare current energy and budget usage against selected time frame.

**5  Weekly schedule**

View the week's temperature curves.



**MARCH 2016**

| MO | TU | WE | TH | FR | SA | SU |
|----|----|----|----|----|----|----|
| 29 | 1  | 2  | 3  | 4  | 5  | 6  |
| 7  | 8  | 9  | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | **26** | 27 |
| 28 | 29 | 30 | 31 | 1  | 2  | 3  |

**Energy Usage**

*Compare this month with...*
☑ Last month  ◉ Last year  ◉ Neighbours

**12%**
more energy used

| This month | 347 kWh |
|------------|---------|
| Last Month | 305 kWh |

**12%**
more money spent

| This month | $137 |
|------------|------|
| Last Month | $120 |

**Budget**

**32%**
under your budget of $200/mo

| | $137 |
|--|------|

**26th March, 2016**
5:04AM

nest

CLICK ON THE CURVE TO ADD OR ADJUST A SETPOINT

24

| 12AM | 3AM | 6AM | 9AM | 12PM | 2PM | 6PM | 9PM | 12AM |
|------|-----|-----|-----|------|-----|-----|-----|------|

**5  VIEW WEEKLY SCHEDULE**

## 2. WIREFRAMES: SETTINGS
—

**1  Weekly settings**
Apply and/or save this week's temperature curves as a profile.

**2  General settings**
Apply settings for pre-heating, weather-based suggestions, SMS alerts, and family permissions.

**3  Personal settings**
Synchronise scheduler with a calendar such as Google Calendar, set target budget, and set week start.
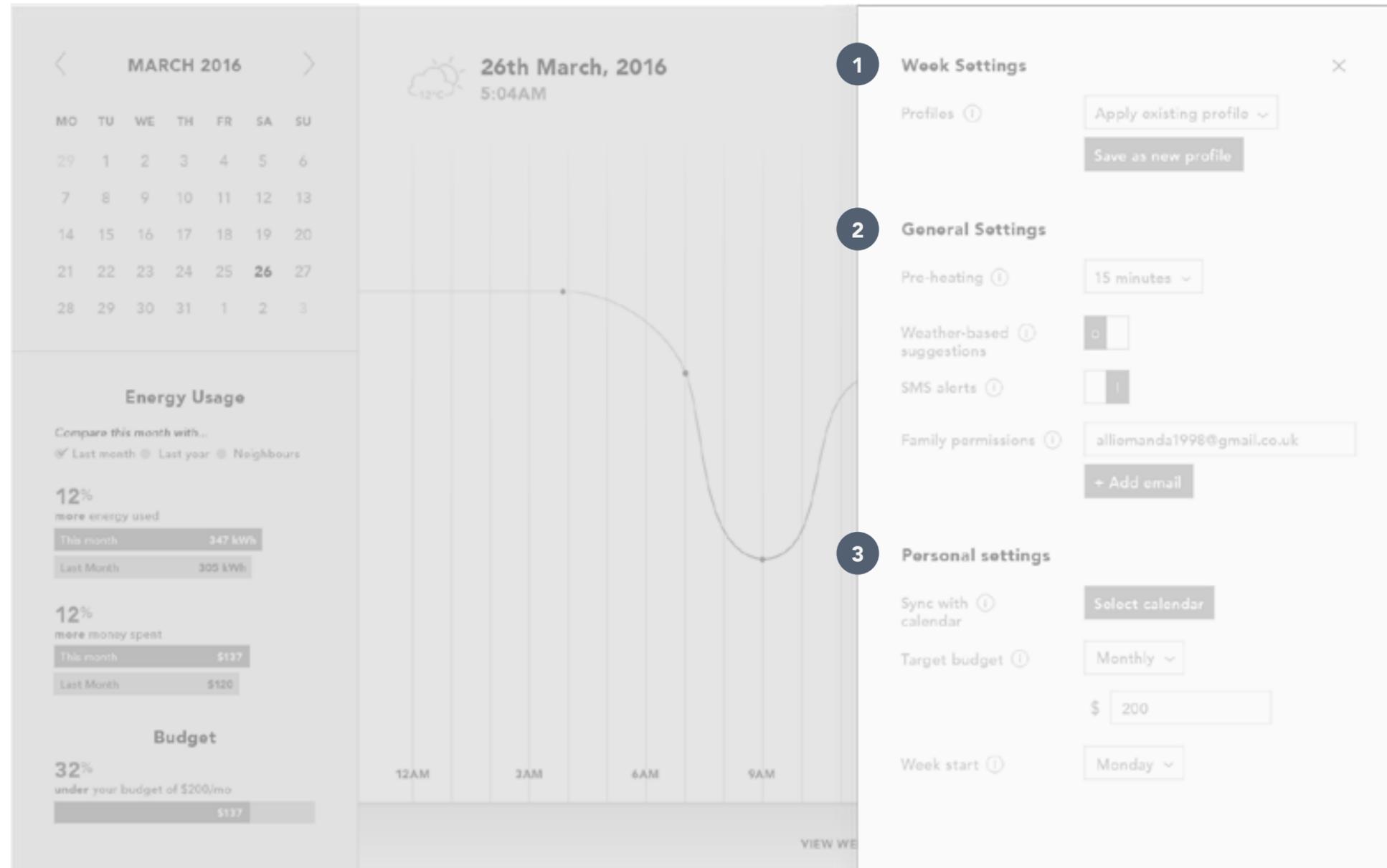
## 3. MOOD & STYLE
—

Setting temperatures should be easy.

I chose to go with a light, no-clutter, accent-focused colour scheme, to help the user visualise temperatures easily through brighter colours against a neutral environment.

**Keywords**
Focus
Soft
Clarity

base colour

accent one

accent two

accent three
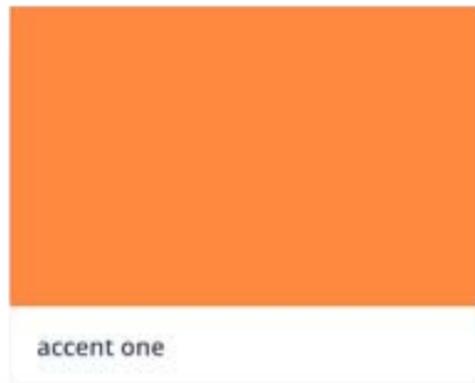
# DESIGN COMPOSITIONS

—

1. Preliminary designs
2. Iteration
3. Final designs

# 1. PRELIMINARY: DEFAULT
—

The first design round was hectic. Colour was a huge issue in terms of balance, and the main content section was too visually cluttered.

The infographics on the sidebar did not convey their intended messages clearly.
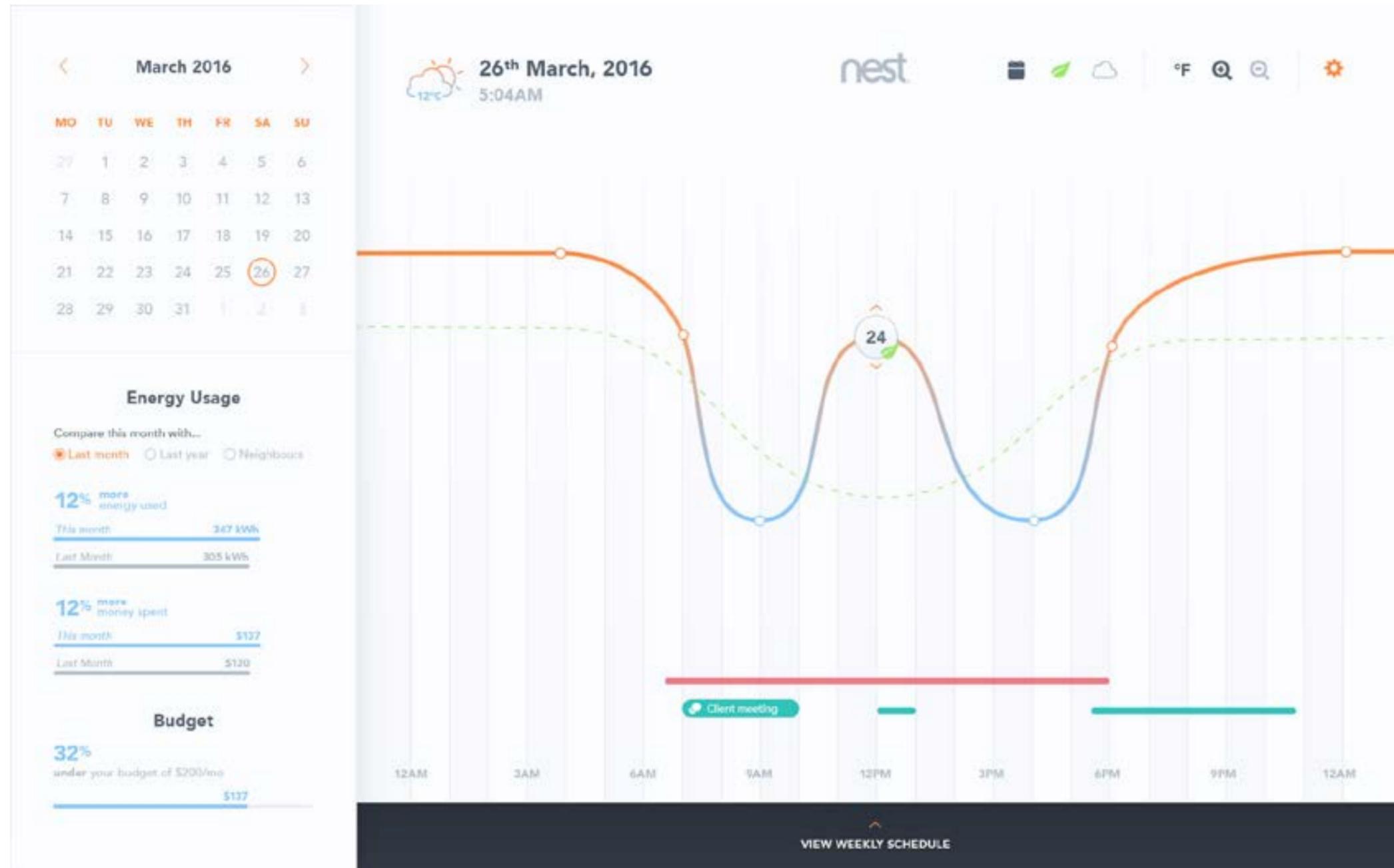
## 2. ITERATION: DEFAULT
—

Having iterated from the preliminary design, I managed to tone down the vast amount of colours to a colour scheme that was meaningful -

**orange** is warm
**blue** is cool
**green** is eco-friendly
**purple** is neutral, and also an accent

The infographics in the sidebar are now both visually consistent as well as comprehensible.
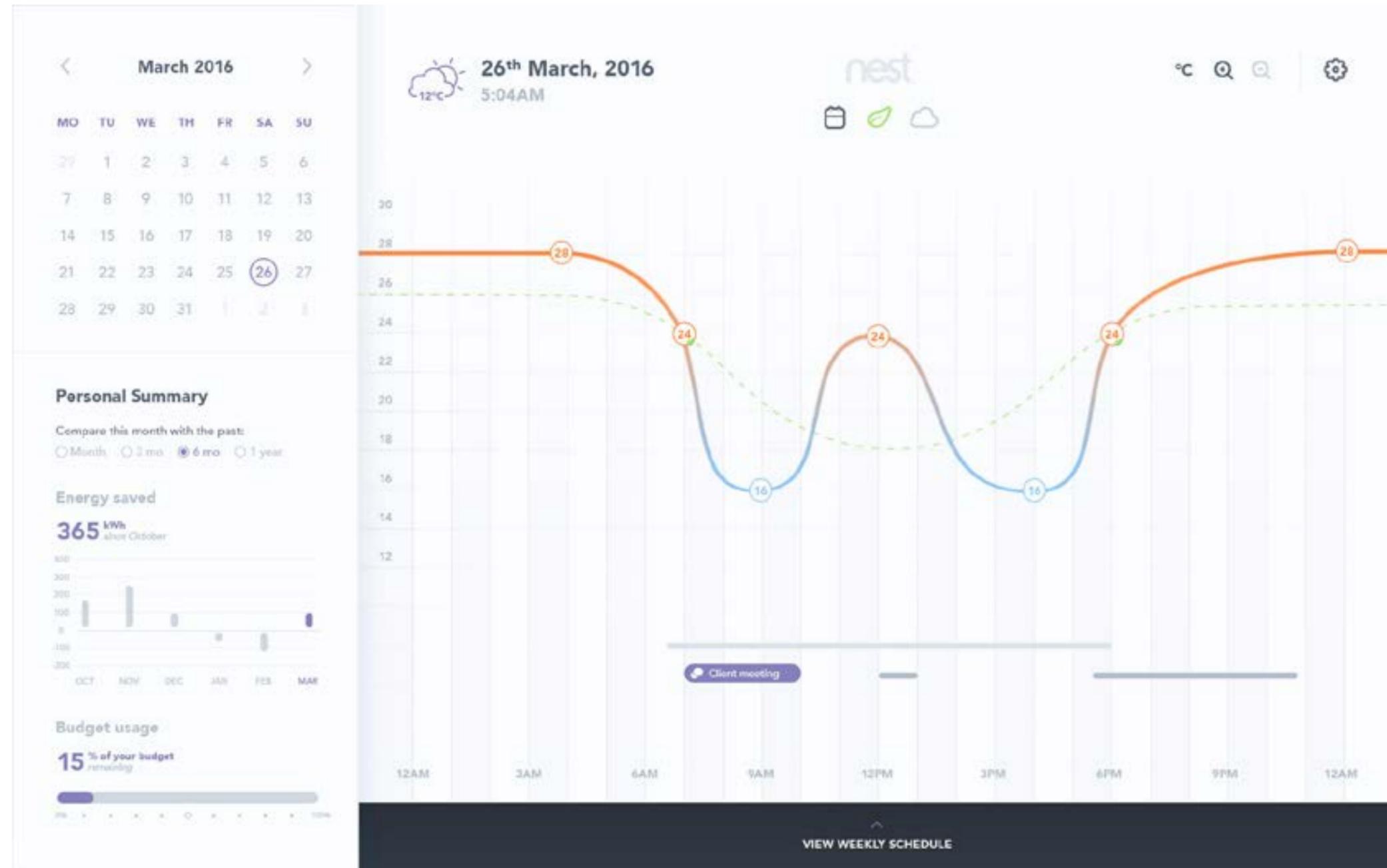
## 2. ITERATION: OTHERS
—

**1  Node settings**
Apply settings for the specified temperature node

**2  Main settings**
Apply weekly, general, and personal application settings

**3  Weekly view**
View the week's temperature curves

**4  Zoom view**
Zoom in to the temperature curve

At this point, there needed to be more work with visual hierarchy.
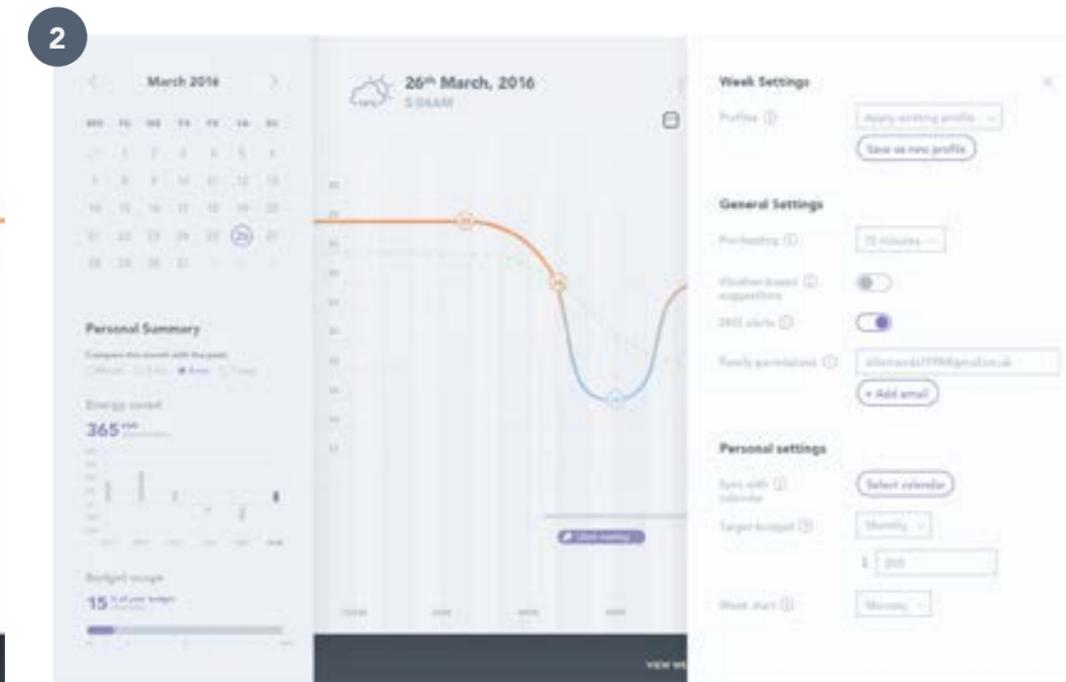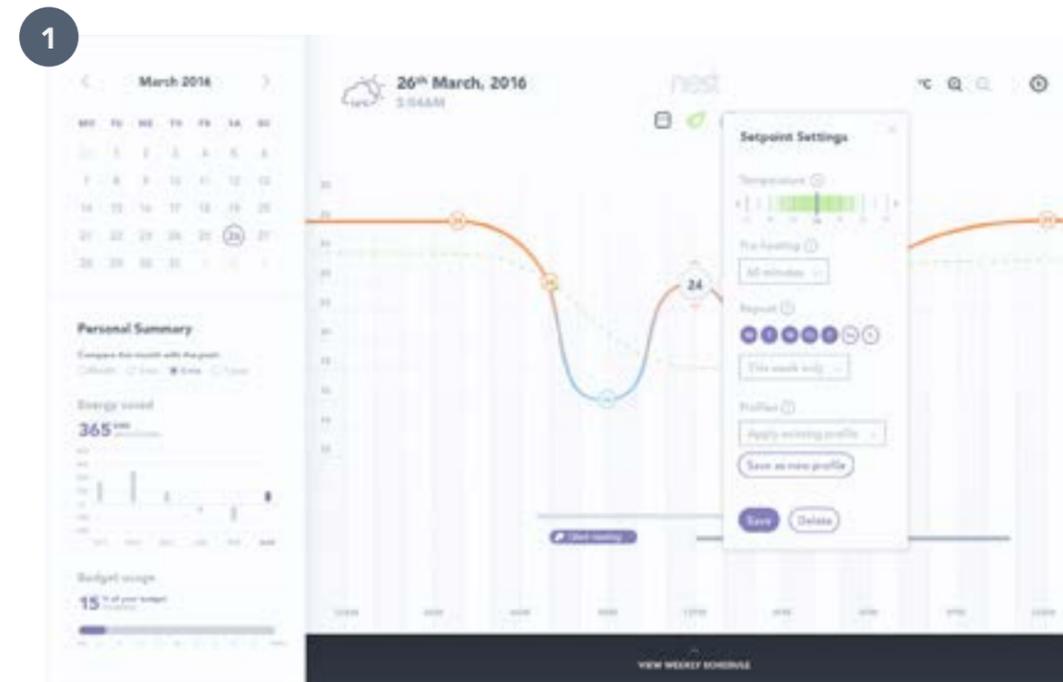
## 3. FINAL DESIGNS: DEFAULT

—

The user lands on a page where the temperature curve takes the focus. Colour-coded temperatures make recognition easy, as do the draggable temperature nodes.

The sidebar features a personal summary of energy and budget usage.

The user can also use the toggles to toggle on and off the calendar, the eco-curve, and the weather-adjusted curve.
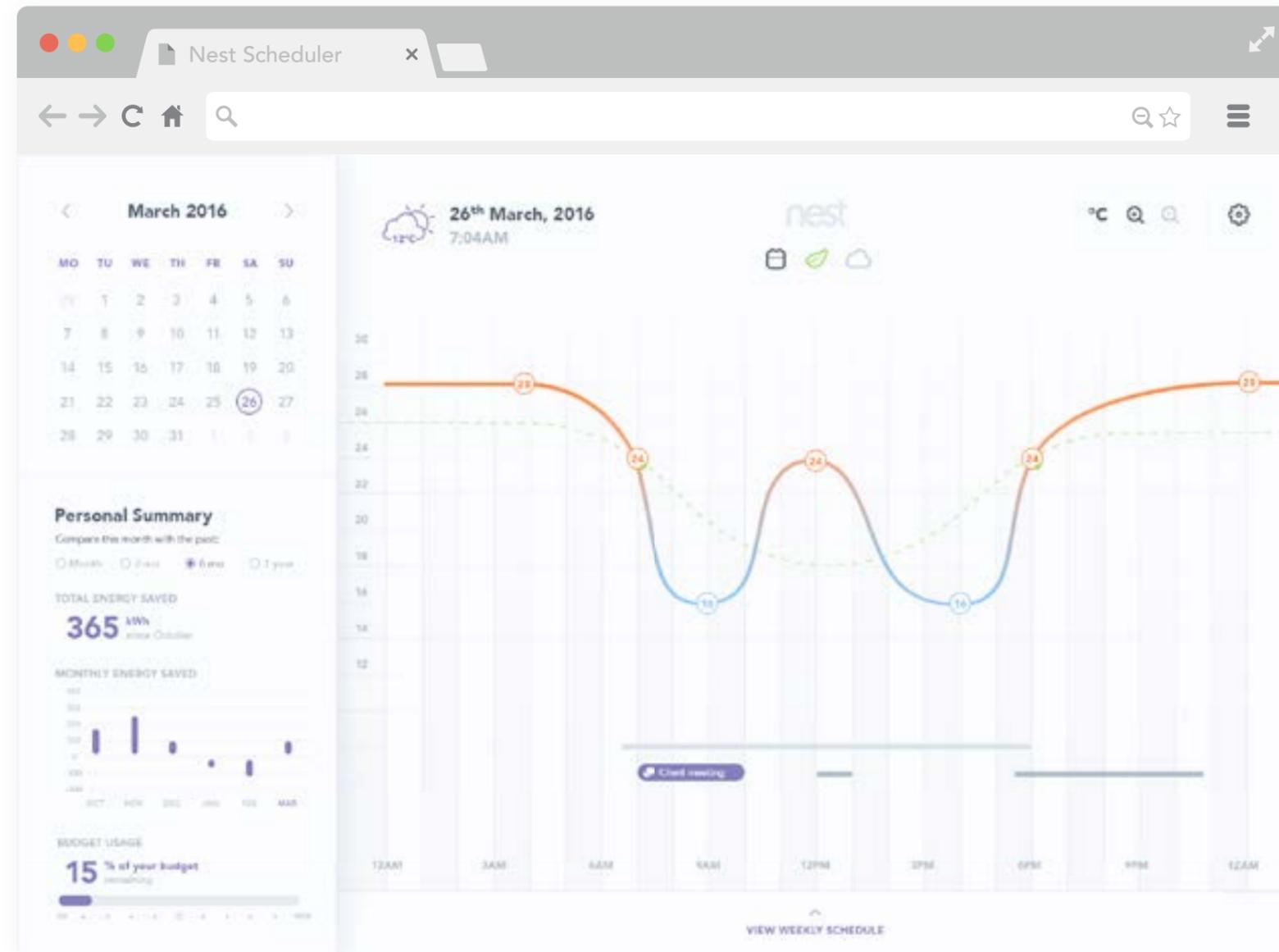
## 3. FINAL DESIGNS: NODE
—

The user can click and drag on a node to adjust the temperature, or click directly to access and apply settings.

Settings include the temperature, pre-heading, repetition, and profiles.
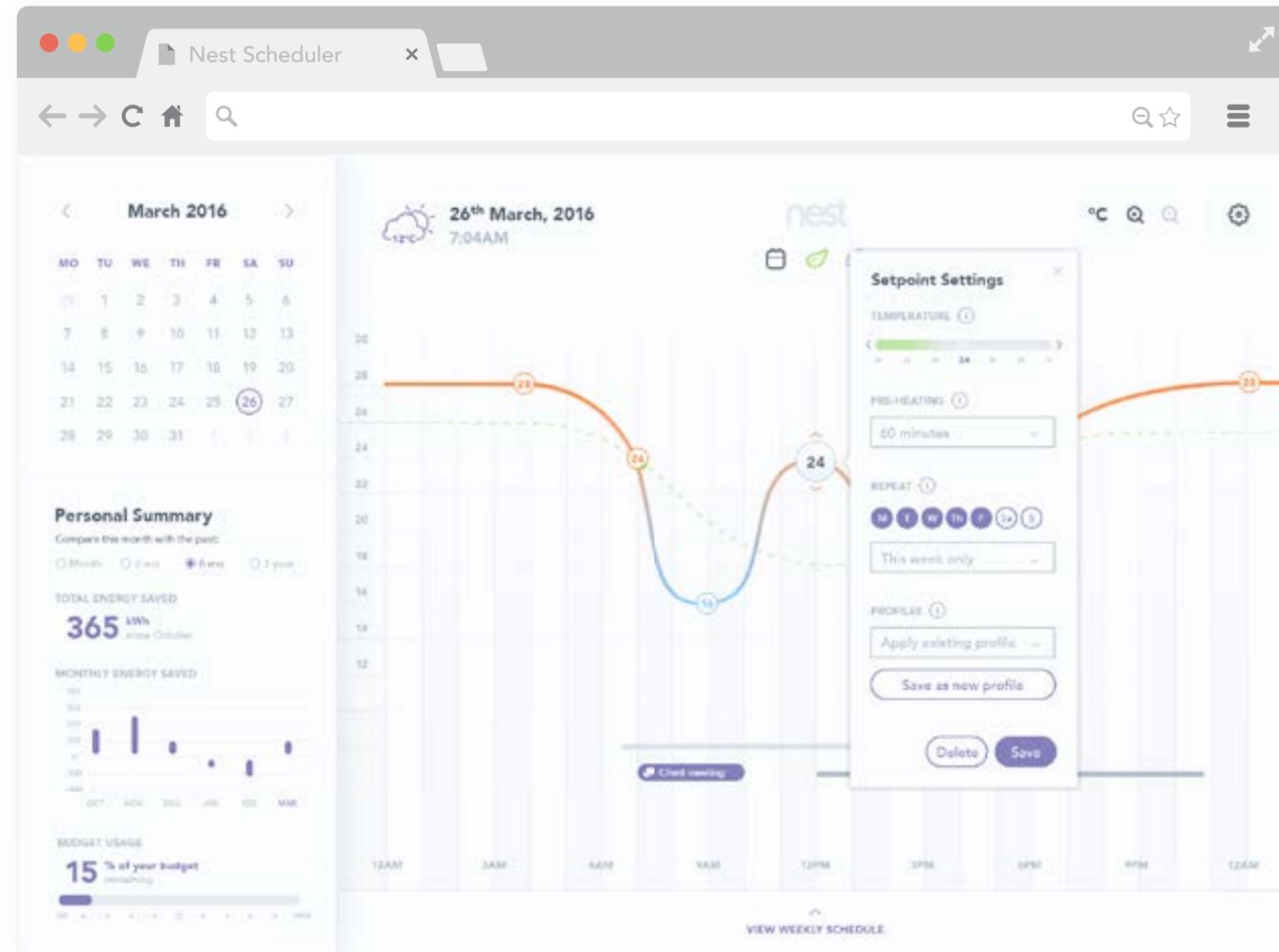
## 3. FINAL DESIGNS: WEEK
—

The user can easily view the
temperature curves for the week by
bringing up the weekly schedule from
the bottom of the main content.

Clicking on a day's curves brings the
day and its temperature curve into
focus in the main graph area.
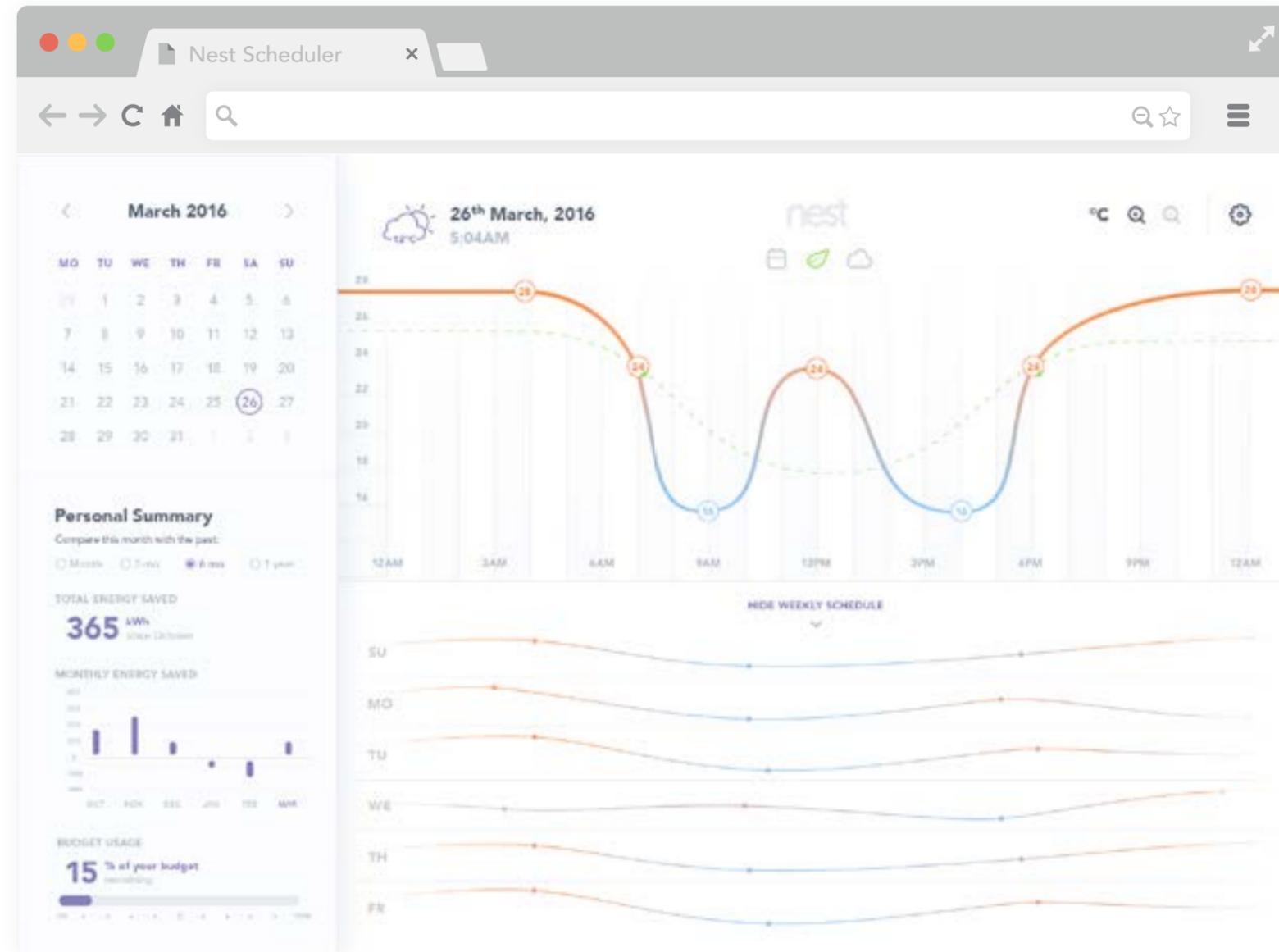
# 3. FINAL DESIGNS: ZOOM
—

The user can zoom into the temperature curve and schedule to better view the nuances of the curve.
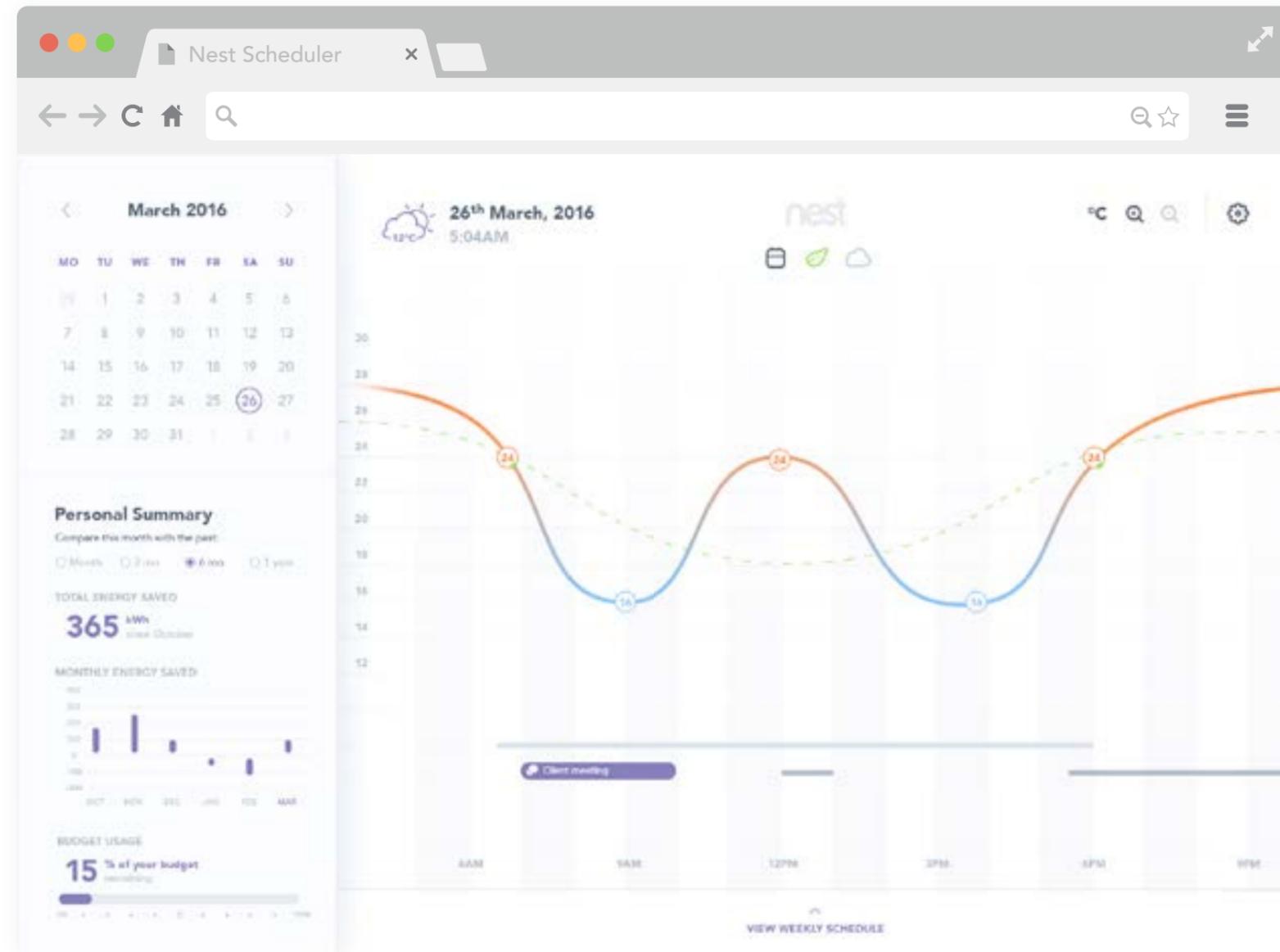
# 3. FINAL DESIGNS: SETTINGS
—

The application's main settings are accessible from the top right of the screen, whereby the user can apply weekly, general, and personal settings for the application.

# Fin
\_