HS2 SOLUTIONS

COMPONENT BASED THEMING WITH UI PATTERNS AND PATTERN LAB

PRESENTED BY BRIAN PERRY

October 26, 2018

Slides: http://bit.ly/ui-patterns-bc

BRIAN PERRY

Hi!

- Sr. Front End Developer at HS2 Solutions
- Rocking the Chicago suburbs
- Lover of all things components
- ... and Nintendo

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Nintendo: wabrian
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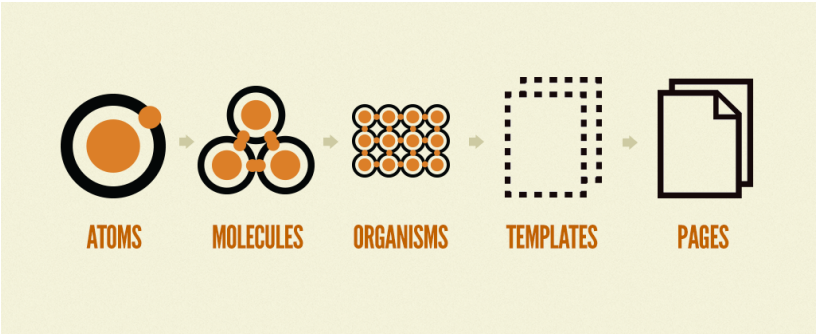
HS2 SOLUTIONS

Component Based Theming
~~With UI Patterns~~

COMPONENT BASED THEMING

What is it?

- Creating modular and re-usable elements
- Building a design system, not a series of pages
- Can use a pattern library for documentation and prototyping
  - Tools like Pattern Lab and Fractal



COMPONENT BASED THEMING

Why Take a component based approach?

- Efficient re-use
  - Write once, use everywhere.
  - Within a single project and even across projects (beyond Drupal even)
- Well isolated chunks of code
- Decoupling front and back end development
  - Theming doesn't have to come last
- Living Style Guide / Pattern Library
  - Simplifies coordination between designers and developers / developers and developers.
  - Rapid prototyping
  - Design system source of truth

Component Based Theming
~~With~~ Without
UI Patterns

WHERE DO I PUT MY PATTERN LIBRARY?

- Many Drupal projects embed the pattern library in a theme. But…
- Consider making a your pattern library an external composer dependency of your theme
  - Could other projects (other CMSes?) use these components?
  - Could it allow a broader set of contributors to build components?

Time Travel Session: Decouple Pattern Lab from Your D8 Theme (SF.gov)

OUR COMPONENT

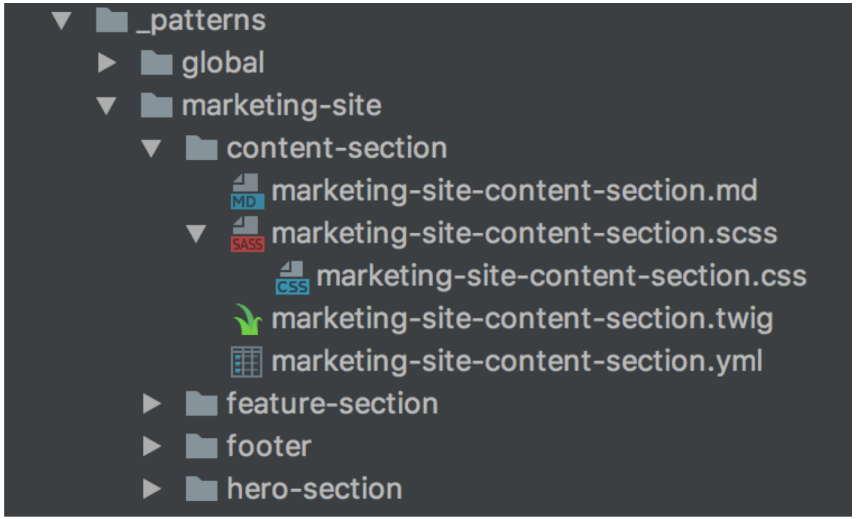
Yeti Snowcone Agency

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Aperiam omnis, maxime libero natus qui minus!

LEARN MORE

THE COMPONENT DIRECTORY

- Everything lives inside component directory in Pattern Lab
  - SASS
  - Twig
  - JS
  - Other Assets
  - Pattern Data



MARKUP AND STYLES

marketing-site-content-section.twig

```twig
<div class="marketing-site-content-section">
  <div class="marketing-site-content-section-img">
    {{ image }}
  </div>
  <div class="marketing-site-content-section-block">
    <h3 class="marketing-site-content-section-block-header">
      {{ header }}
    </h3>
    <p class="marketing-site-content-section-block-subheader subheader">
      {{ subheader }}
    </p>
    {{ button }}
  </div>
</div>
```

marketing-site-content-section.scss

```scss
.marketing-site-content-section {
  display: flex;
  flex-wrap: wrap;

  .button.round {
    border-radius: 5000px;
    text-transform: uppercase;
    margin-bottom: 0;
  }

  .marketing-site-content-section-img {
    align-self: center;
    flex: 1 0 100%;

    img {
      width: 100%;
    }

    @media screen and (min-width: 40em) {
      flex: 1 0 50%;
    }
  }

  .marketing-site-content-section-block {
    padding: 1rem;
    flex: 1 0 100%;
    align-self: stretch;
    background: $light-gray;
    display: flex;
    flex-direction: column;
```

COMPONENT IN PATTERN LAB

content section

Content Section

A responsive content section that features equal height images and content containers. On mobile they collapse to a card like setup.

*The **Content Section** pattern is included in the following patterns: marketing-site-marketing-site-landing*

Twig | HTML

```
<div class="marketing-site-content-section">
  <div class="marketing-site-content-section-img">
    <img src="https://images.pexels.com/photos/300857/pexels-photo-300857.jpeg?h=3508
```

Yeti Snowcone Agency

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Aperiam omnis, maxime libero natus qui minus!

LEARN MORE

ADD EXTERNAL PATTERN LAB DEPENDENCY TO DRUPAL

- Current take on approach for composer managed Drupal projects:
  - In Pattern Lab project:
    - Add composer.json with "name": "(orgname)/(repository_name)"
  - In Drupal project:
    - Add repositories entry in composer.json referencing Pattern Lab repository
    - Require composer-copy-file
    - Configure composer.json to copy Pattern Lab instance from vendor dir to custom theme (may want to .gitignore)
    - Composer require your Pattern Lab project

Many other options – working on a blog post.

MAPPING TO DRUPAL

Defining a Twig Namespace - foundation_patterns.info.yml

```
# This section is used by the contrib module, Component Libraries. It allows you
# to reference .twig files in your sass/ directory by using the Twig namespace:
# @components
component-libraries:
  marketing:
    paths:
      - pattern-lab/source/_patterns/marketing-site
  global:
    paths:
      - pattern-lab/source/_patterns/global
```

MAPPING TO DRUPAL

Drupal Presenter Template - paragraph--marketing-content-section.html.twig

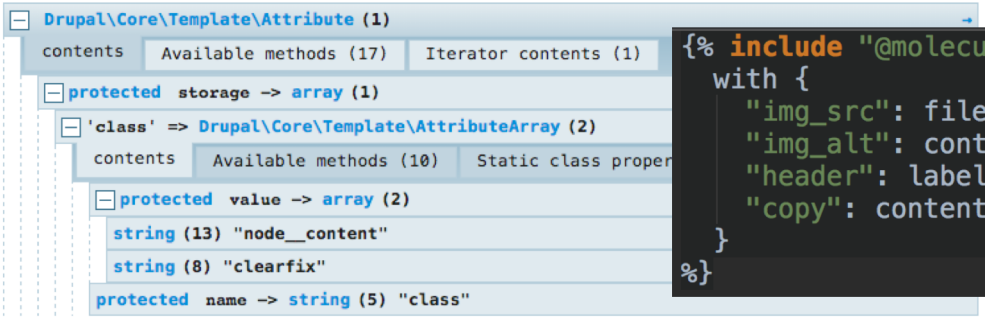
```
{{ attach_library('foundation_patterns/marketing-site-content-section') }}

{% include "@marketing/content-section/marketing-site-content-section.twig"
  with {
    "image": content.field_fpc_image,
    "header": content.field_fpc_header,
    "subheader": content.field_fpc_subheader,
    "button": content.field_fpc_link
  }
%}
```

PAIN POINTS

It works, but…

- Requires quite a bit of debugging
- Difficult for those not familiar with Twig / Render Array Structure
- Easy to get carried away / break things Drupal depends on (Quickedit, Panels IPE)
- card.twig is a black box to Drupal



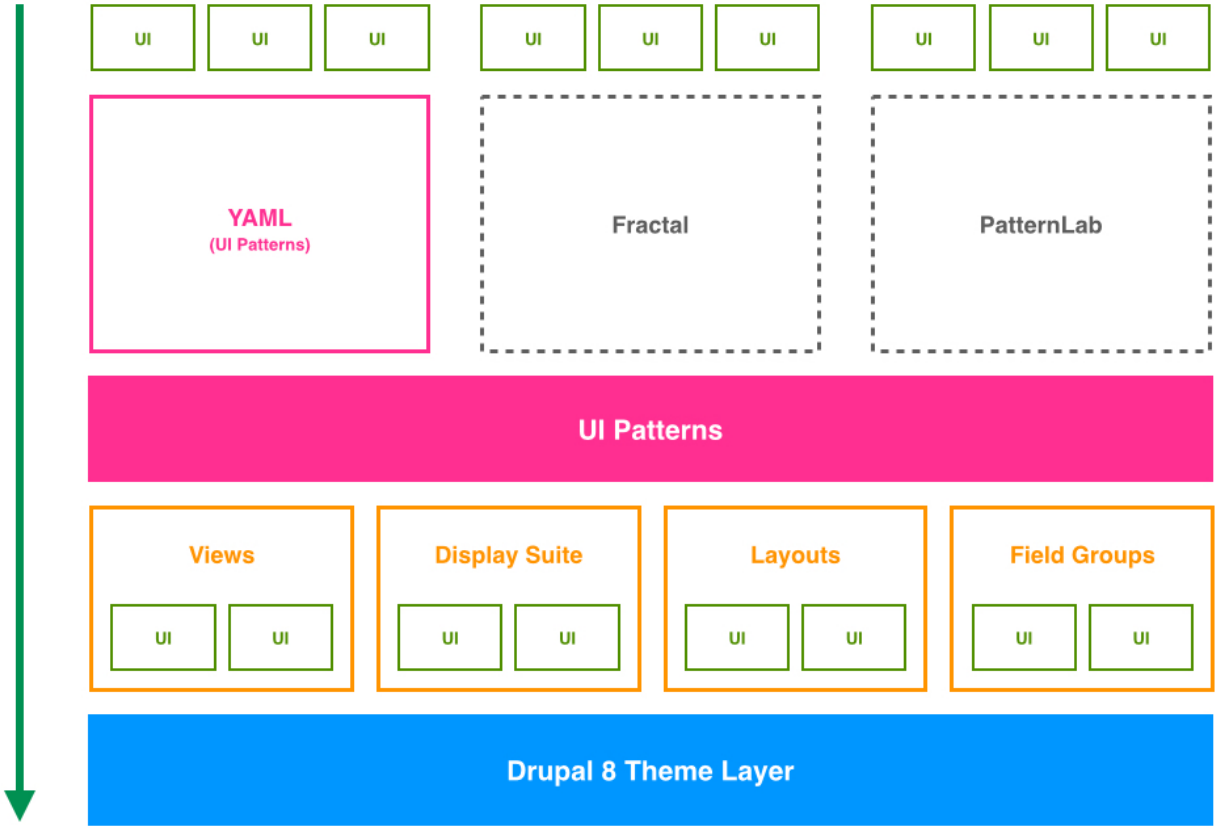

```
{% include "@molecules/card/card.twig"
  with {
    "img_src": file_url(content.field_image.entity.fileuri),
    "img_alt": content.field_image.0['#item'].alt,
    "header": label,
    "copy": content.body
  }
%}
```

Component Based Theming With UI Patterns

UI PATTERNS MODULE

Define and manage components in a way that Drupal understands

- Define UI Patterns as Drupal Plugins
- Use defined patterns with component friendly modules
  - Views, field groups, panels, display suite, paragraphs (requires field layout or display suite)
- Configure data mappings in the UI
- Optional Pattern Library page exposed in Drupal
- Also allows Drupal to:
  - Preprocess patterns
  - Render patterns programmatically


UI
UI
UI
UI
UI
UI
UI
UI
UI
YAML
(UI Patterns)
Fractal
PatternLab
UI Patterns
Views
UI
UI
Display Suite
UI
UI
Layouts
UI
UI
Field Groups
UI
UI
Drupal 8 Theme Layer

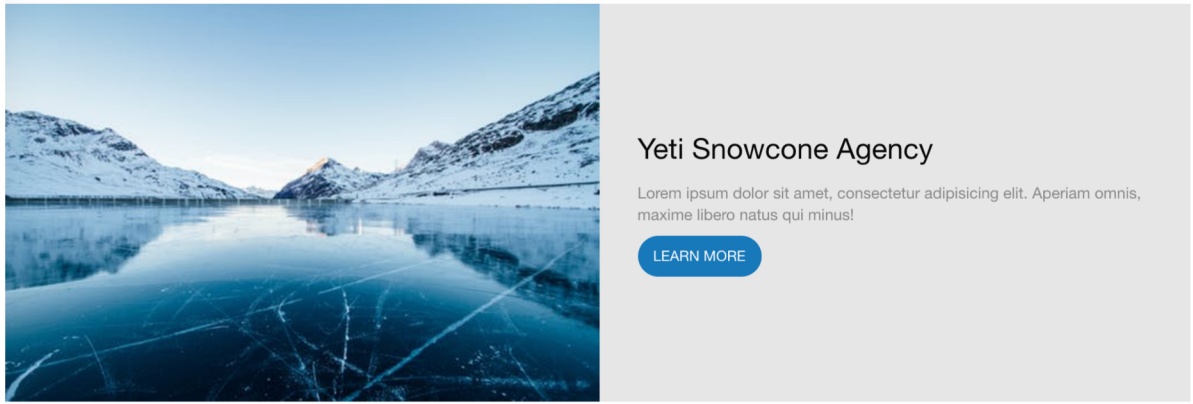
UI PATTERNS LIBRARY SUBMODULE

Marketing Site Content Section

A responsive content section that features equal height images and content containers. On mobile they collapse to a card like setup.

Field	Label	Type	Description
`image`	Image	`image`	Associated image.
`header`	Header	`text`	Header Text
`subheader`	Subheader Text	`text`	Subheader Text
`button`	More Button	`link`	Button leading to detail view.

Preview



View Marketing Site Content Section as stand-alone

DEFINING A PATTERN

marketing-site-content-section.pattern.yml

```yaml
marketing_site_content_section:
  label: Marketing Site Content Section
  description: A responsive content section that features equal height images and content containers. On mobile
  they collapse to a card like setup.
  fields:
    image:
      type: image
      label: Image
      description: Associated image.
      preview: >
        <img src="https://images.pexels.com/photos/300857/pexels-photo-300857
.jpeg?h=350&auto=compress&cs=tinysrgb" alt="" />
    header:
      type: text
      label: Header
      description: Header Text
      preview: Yeti Snowcone Agency
    subheader:
      type: text
      label: Subheader Text
      description: Subheader Text
      preview: Lorem ipsum dolor sit amet, consectetur adipisicing elit. Aperiam omnis, maxime libero natus qui
minus!
    button:
      type: link
      label: More Button
      description: Button leading to detail view.
      preview: >
        <a href="#" class="round button small">learn more</a>
  use: "@marketing/content-section/marketing-site-content-section.twig"
  libraries:
    - pattern:
        css:
          component:
            marketing-site-content-section.css: {}
```

```
marketing_site_content_section:
  label: Marketing Site Content Section
  description: A responsive content section that features equal height images and content containers. On mobile
  fields:
    preview: >
      <img src="https://images.pexels.com/photos/300857/pexels-photo-300857
.jpeg?h=350&auto=compress&cs=tinysrgb" alt="" />
  header:
    type: text
    label: Header
    description: Header Text
    preview: Yeti Snowcone Agency
  subheader:
    type: text
    label: Subheader Text
    description: Subheader Text
    preview: Lorem ipsum dolor sit amet, consectetur adipisicing elit. Aperiam omnis, maxime libero natus qui
minus!
  button:
    type: link
    label: More Button
    description: Button leading to detail view.
    preview: >
      <a href="#" class="round button small">learn more</a>
use: "@marketing/content-section/marketing-site-content-section.twig"
libraries:
  - pattern:
```

```
marketing_site_content_section:
  label: Marketing Site Content Section
  description: A responsive content section that features equal height images and content containers. On mobile
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  fields:
fields:
  image:
    type: image
    label: Image
    description: Associated image.
    preview: >
      <img src="https://images.pexels.com/photos/300857/pexels-photo-300857.
  header:
    type: text
    label: Header
    description: Header Text
    preview: Yeti Snowcone Agency
  subheader:
    type: text
    label: Subheader Text
      <a href="#" class="round button small">learn more</a>
  use: "@marketing/content-section/marketing-site-content-section.twig"
  libraries:
    - pattern:
```

```
marketing_site_content_section:
  label: Marketing Site Content Section
  description: A responsive content section that features equal height images and content containers. On mobile
they collapse to a card like setup.
  fields:
    image:
      type: image
      label: Image
      description: Associated image.
      preview: >
        <img src="https://images.pexels.com/photos/300857/pexels-photo-300857
.jpeg?h=350&auto=compress&cs=tinysrgb" alt="" />
    header:
      type: text
      label: Header
      description: Header Text
      preview: Yeti Snowcone Agency
    subheader:
      type: text
use: "@marketing/content-section/marketing-site-content-section.twig"
libraries:
  - pattern:
      css:
        component:
          marketing-site-content-section.css: {}
use: "@marketing/content-section/marketing-site-content-section.twig"
libraries:
  - pattern:
```

CAN I GET A SUGGESTION?

pattern-marketing-site-content-section.html.twig

- If 'use:' doesn't make sense for you, default template suggestions exist.
  - Could add your twig markup here
  - Can even include/extend/embed and map data.
- Can preprocess to add additional suggestions.
  - See hook_theme_suggestions_alter()

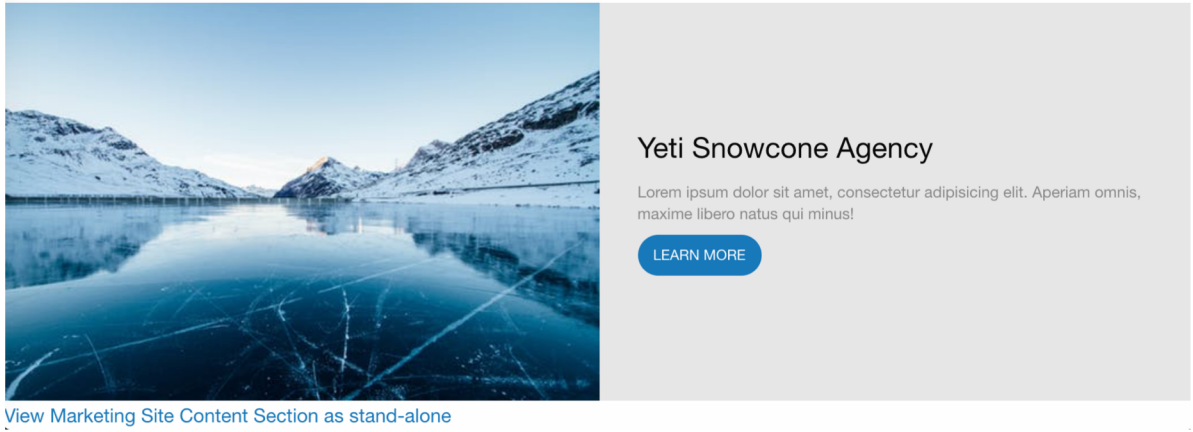
DRUPAL PATTERN LIBRARY

Marketing Site Content Section

A responsive content section that features equal height images and content containers. On mobile they collapse to a card like setup.

Field	Label	Type	Description
`image`	Image	`image`	Associated image.
`header`	Header	`text`	Header Text
`subheader`	Subheader Text	`text`	Subheader Text
`button`	More Button	`link`	Button leading to detail view.

Preview



View Marketing Site Content Section as stand-alone

AND NOW FOR THE PART THAT EVERYONE GETS TRIPPED UP ON…

EXPOSING YOUR PATTERN IN DRUPAL

Integration modules

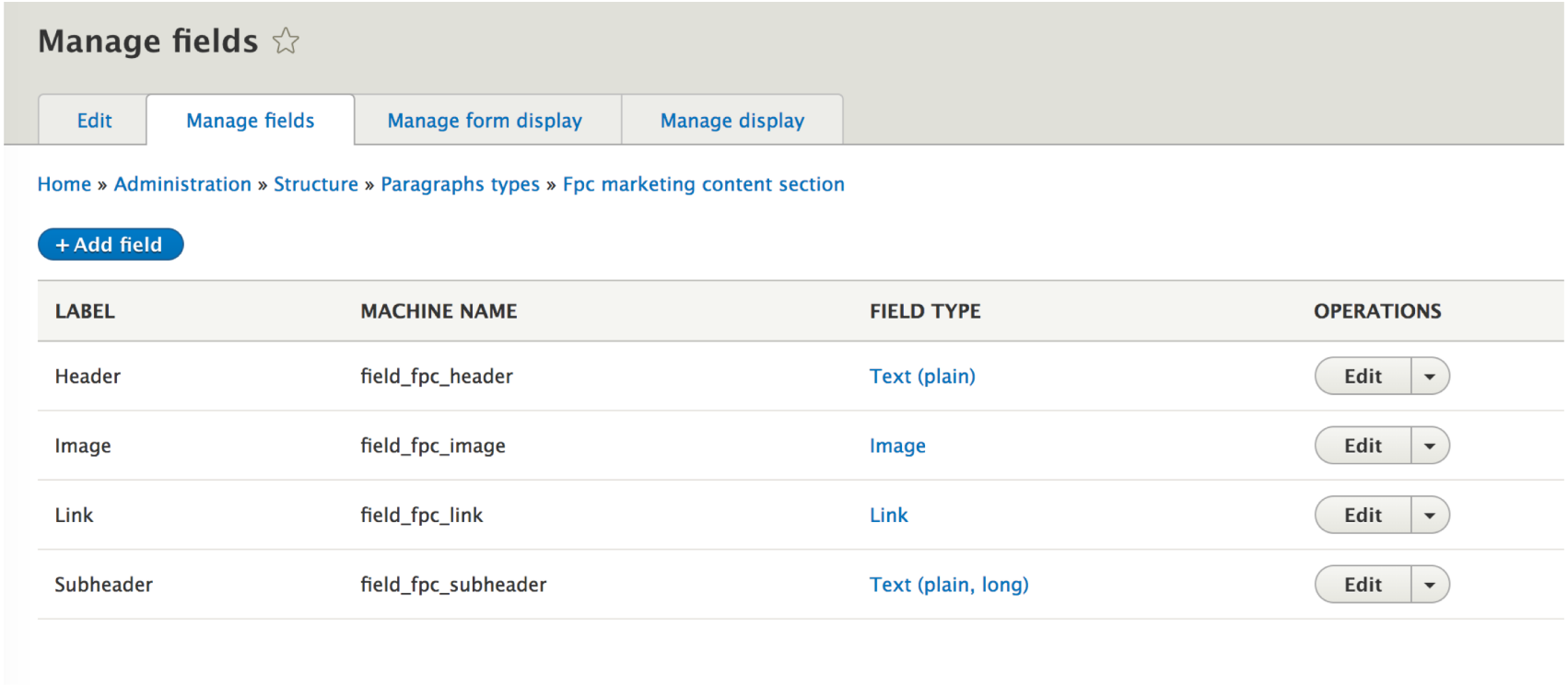
- **UI Patterns Layouts** – makes patterns available via Layout Discovery
- **UI Patterns Views** – makes patterns available as views row style
- **UI Patterns Display Suite** – makes patterns available as display suite field templates
- **UI Patterns Field Group** – makes patterns available to field groups

Looking for a place to start?

- Enable Field Layout
- Enable UI Patterns Layouts
- Begin enjoying your patterns anywhere layouts are available.

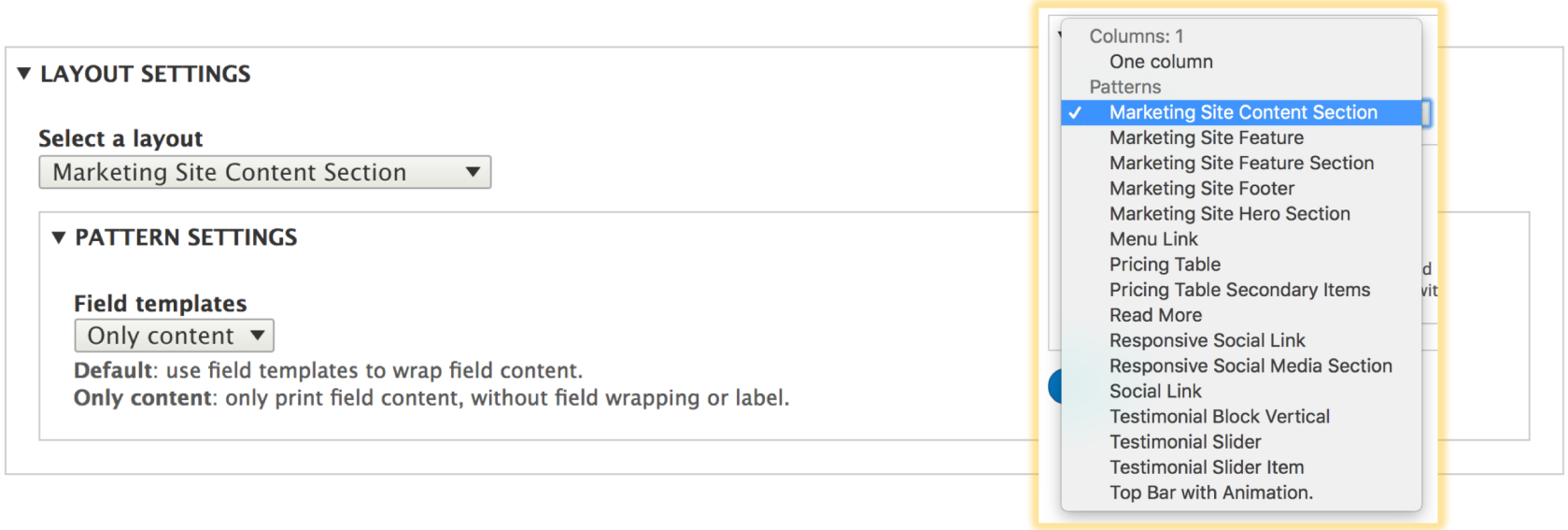
Paragraphs are common component friendly option.

CREATE PARAGRAPH TYPE

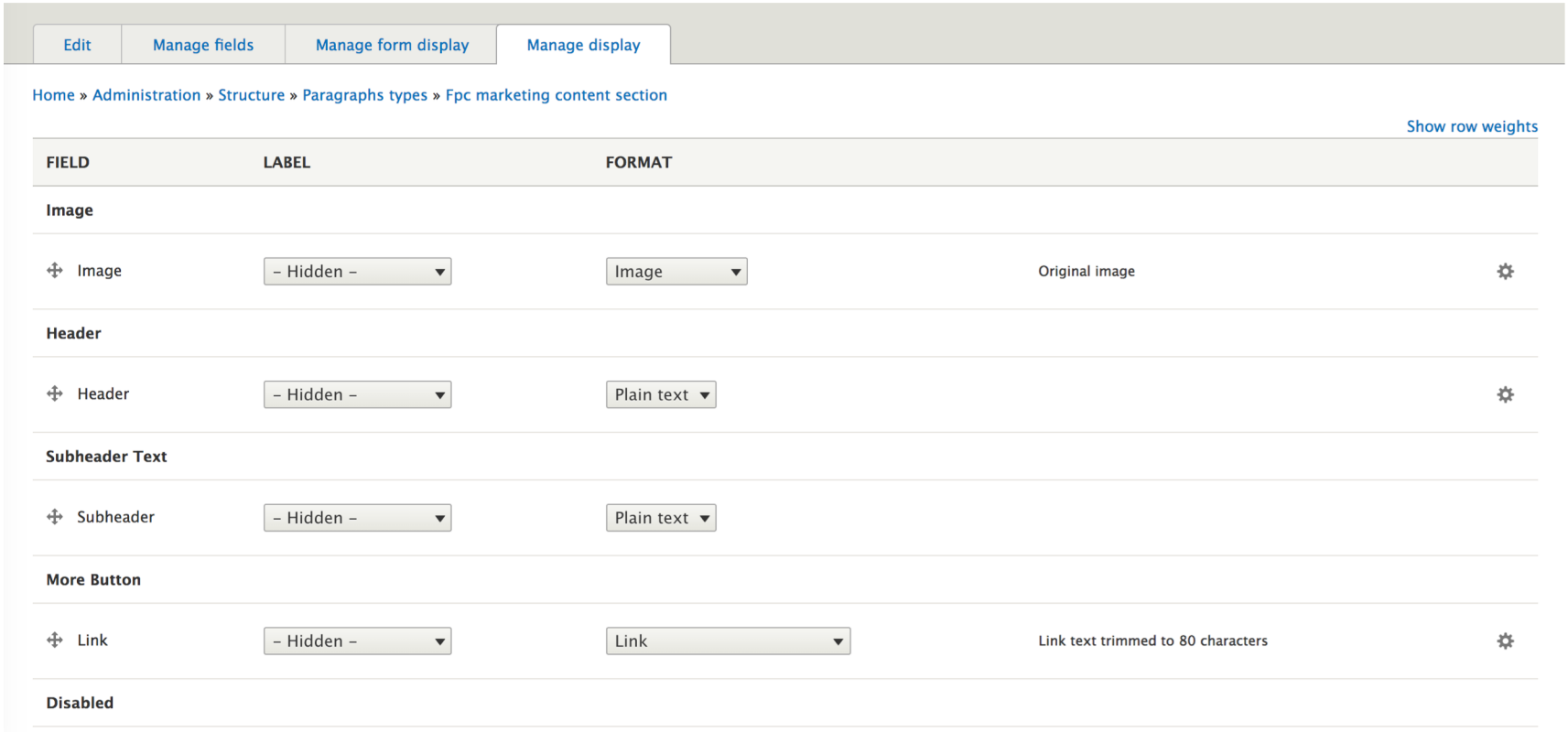


MANAGE DISPLAY: LAYOUT SETTINGS

Select your pattern from the list.



MAP PARAGRAPH FIELDS TO PATTERN FIELDS



Beyond The Basics

TESTIMONIAL BLOCK PATTERN

Testimonial Block Vertical

A testimonial block to tell your site visitors how awesome you are.

Field	Label	Type	Description
`testimonial_avatar`	Testimonial Avatar	`image`	Associated image.
`testimonial_quote`	Testimonial Quote Copy	`text`	Testimonial quote copy
`testimonial_person`	Testimonial Name	`text`	Name attributed to Testimonial
`testimonial_title`	Testimonial Title	`text`	Title of person attributed to Testimonial
`testimonial_company`	Testimonial Company	`text`	Company of person attributed to Testimonial

Preview

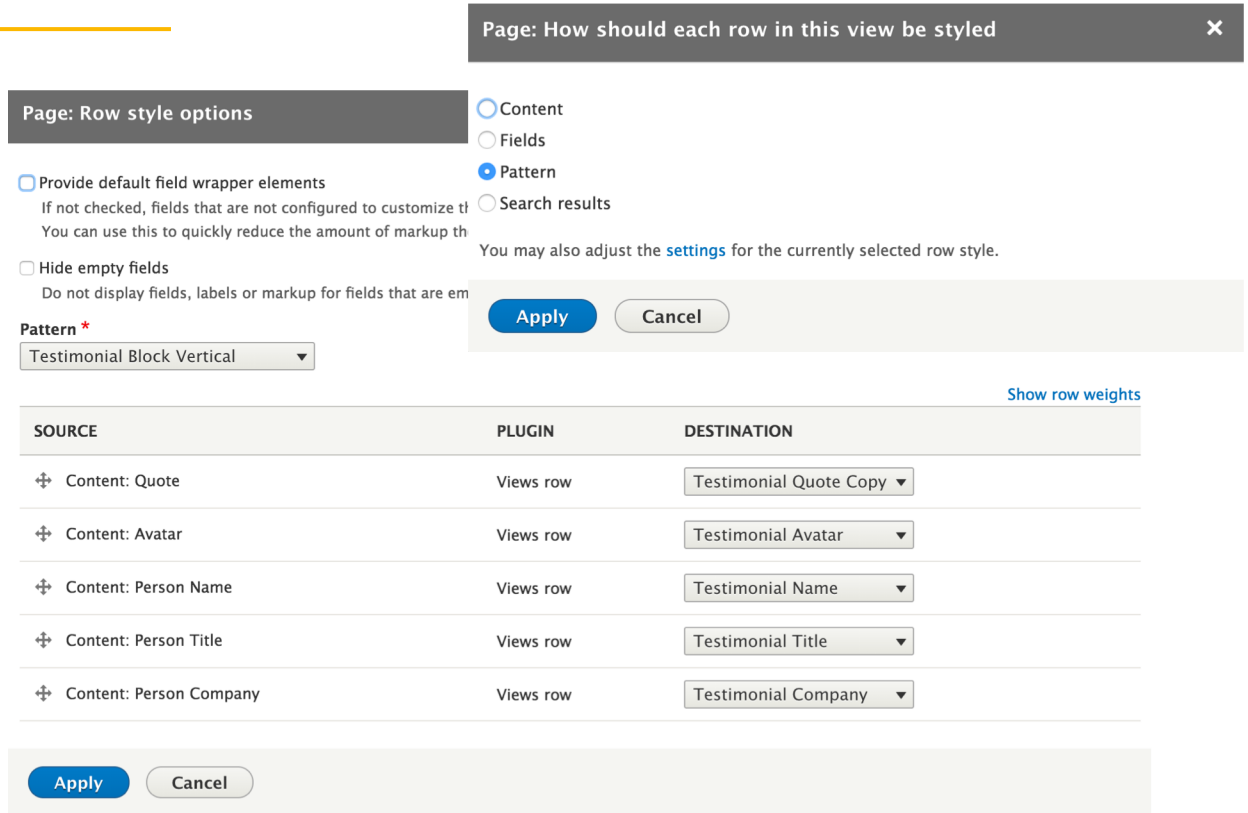
Lorem ipsum dolor sit amet, consectetur adipiscing elit. In ultrices, elit sed faucibus pharetra, diam mauris bibendum orci, sit amet ullamcorper purus dui sit amet augue. Donec aliquet diam ut neque mattis, eu tristique sem rutrum.

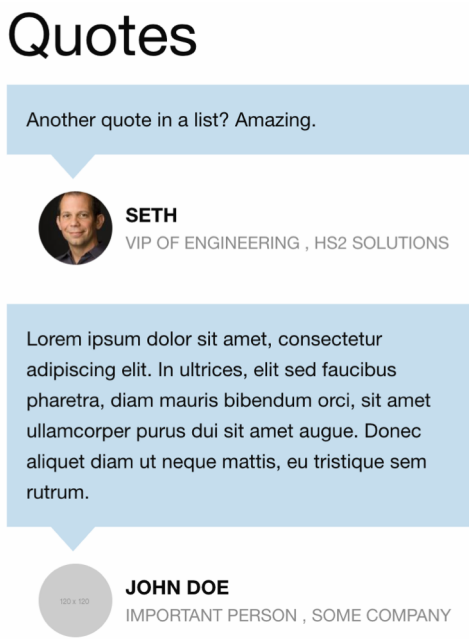
JOHN DOE

IMPORTANT PERSON, SOME COMPANY

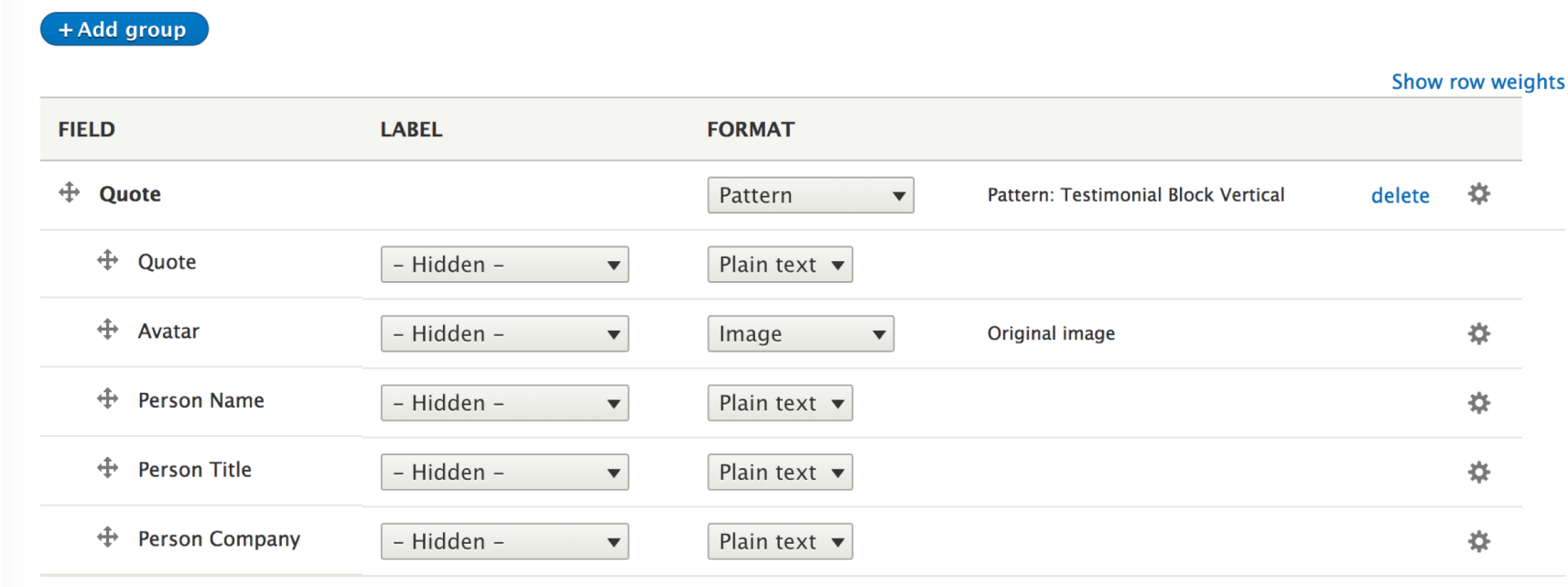
View Testimonial Block Vertical as stand-alone

UI PATTERNS VIEWS

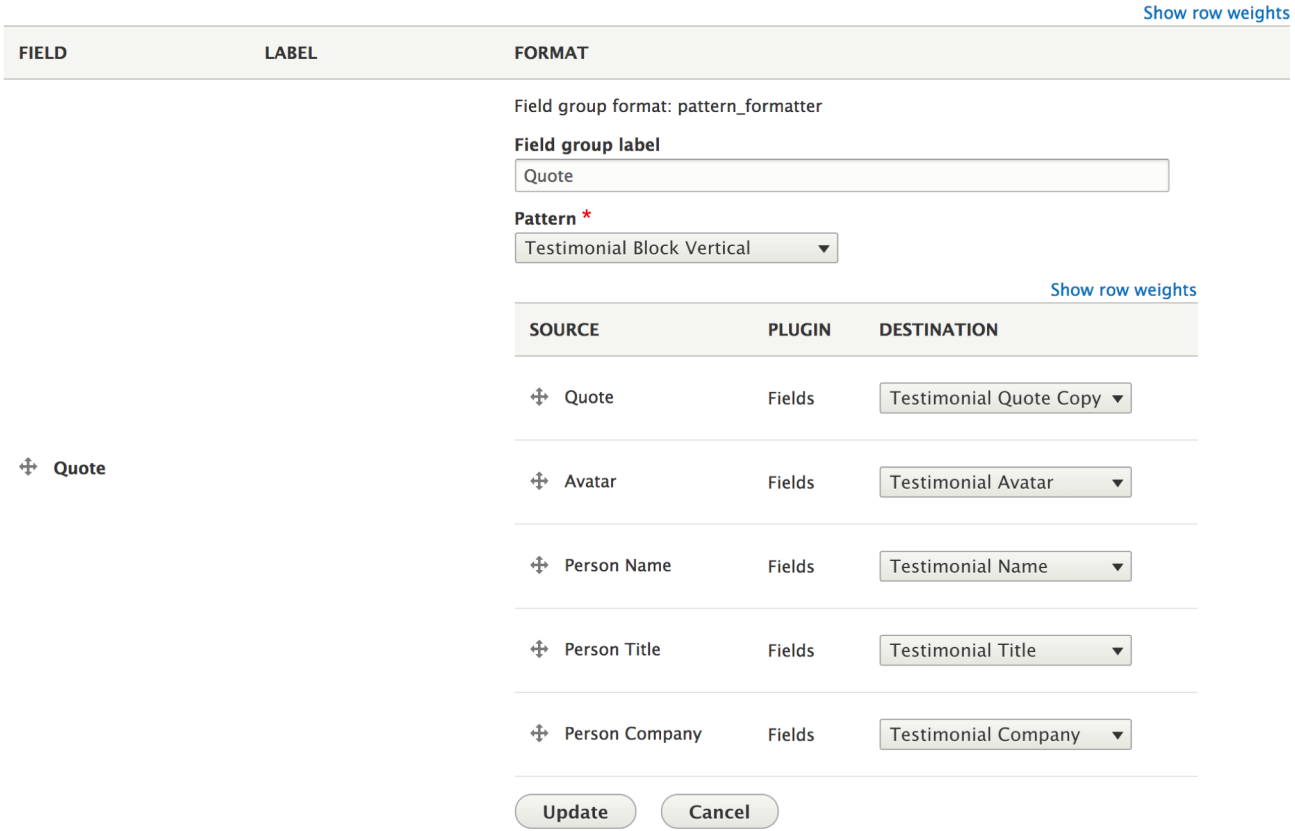




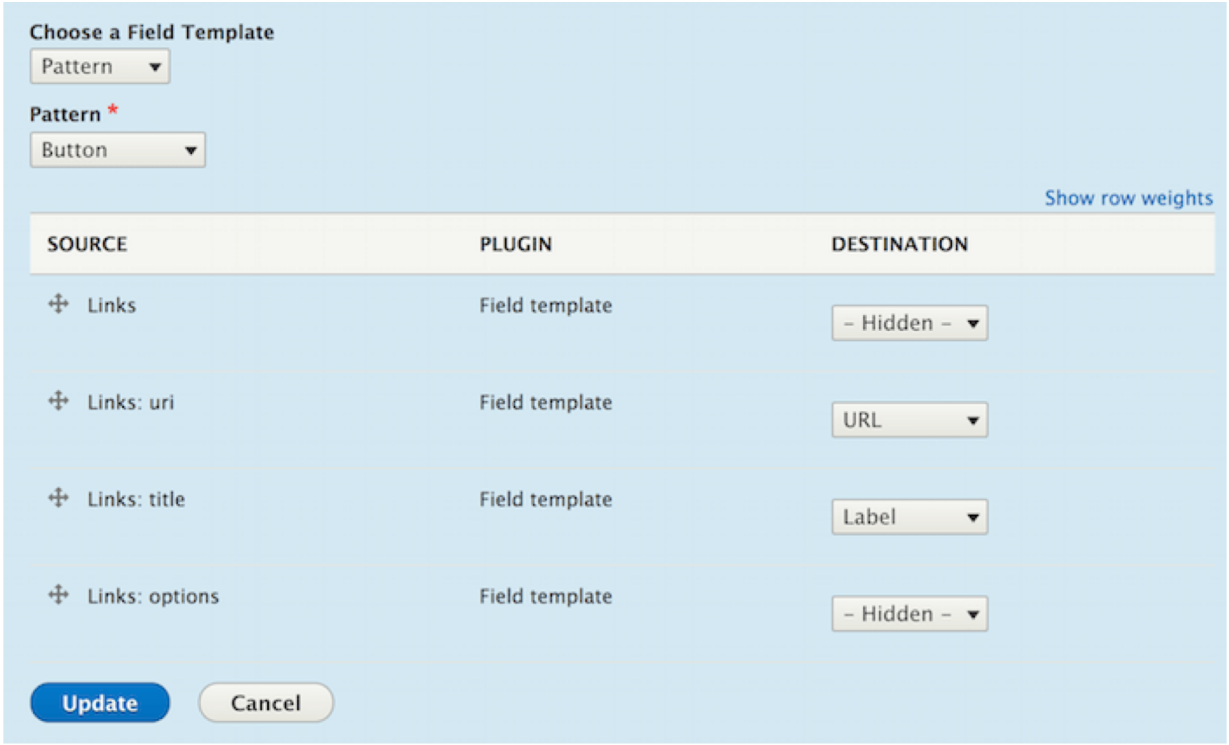
UI PATTERNS FIELD GROUP



UI PATTERNS FIELD GROUP



UI PATTERNS DISPLAY SUITE



RENDER USING TWIG FUNCTION

```
{# With static content #}

{{ pattern('testimonial_block_vertical',
  {
    testimonial_quote: 'Pretty cool how we can use patterns all of these
    testimonial_avatar: '<img src="https://placehold.it/60" alt="" />',
    testimonial_person: 'Pattern Man',
    testimonial_title: 'Same Pattern',
    testimonial_company: 'Different Context'
  }
) }}

{# With dynamic content #}

{{ pattern('testimonial_block_vertical',
  {
    testimonial_quote: content.field_quote,
    testimonial_avatar: content.field_avatar,
    testimonial_person: content.field_person_name,
    testimonial_title: content.field_person_title,
    testimonial_company: content.field_person_company
  }
) }}
```

Pretty cool how we can use patterns all of these different ways. And you can quote me on that.

PATTERN MAN

SAME PATTERN, DIFFERENT CONTEXT

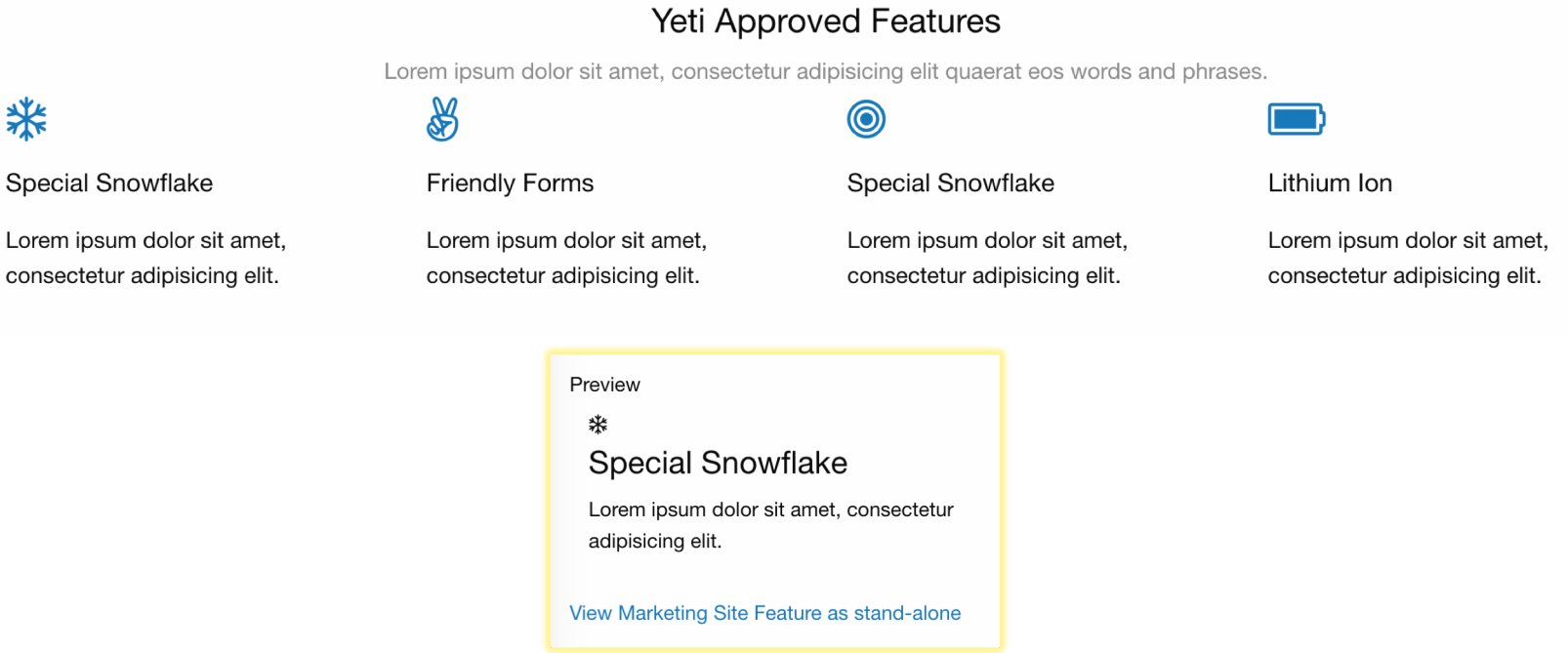
RENDER PATTERN PROGRAMMATICALLY

```php
<?php
$elements['quote'] = [
  '#type' => 'pattern',
  '#id' => 'testimonial_block_vertical',
  '#fields' => [
    'testimonial_quote' => 'You must do the things you think you cannot do,
    'testimonial_avatar' => '<img src="https://placehold.it/60" alt="" />',
    'testimonial_person' => 'Master of teh Codez',
    'testimonial_title' => 'Lead Lead Developer',
    'testimonial_company' => 'Reports to No One'
  ]
];

\Drupal::service('renderer')->render($elements);
```

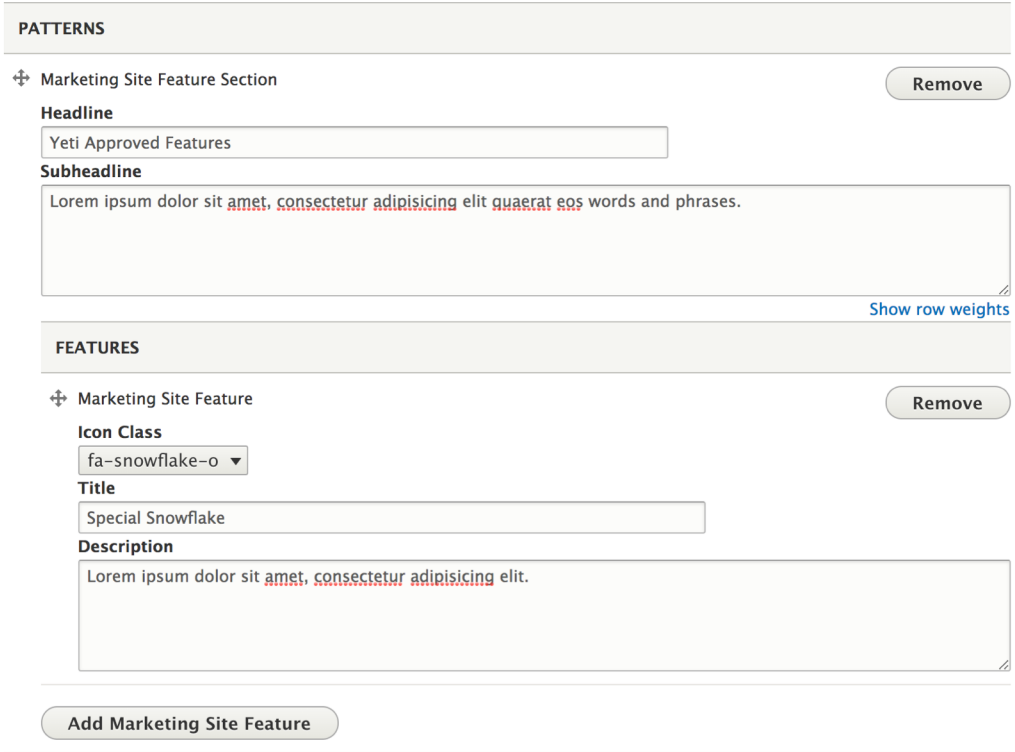
SUB-PATTERNS

Not yet formally supported, but…



SUB-PATTERNS

…can use nested paragraphs for same end result



CAN RENDER PATTERNS IN YOUR PATTERN PREVIEW

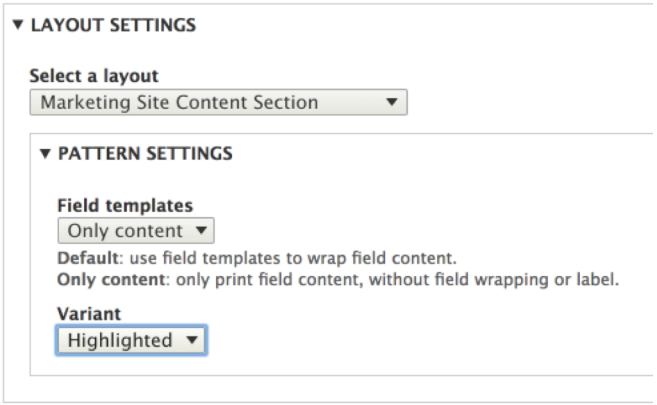
```yaml
features:
  type: pattern
  label: Features
  description: One or more features patterns to be included in grid.
  preview:
    - type: pattern
      id: marketing_site_feature
      fields:
        icon_class: fa-snowflake-o
        title: Special Snowflake
        description: Lorem ipsum dolor sit amet, consectetur adipisicing elit.
    - type: pattern
      id: marketing_site_feature
      fields:
        icon_class: fa-angellist
        title: Friendly Forms
        description: Lorem ipsum dolor sit amet, consectetur adipisicing elit.
```

VARIANTS

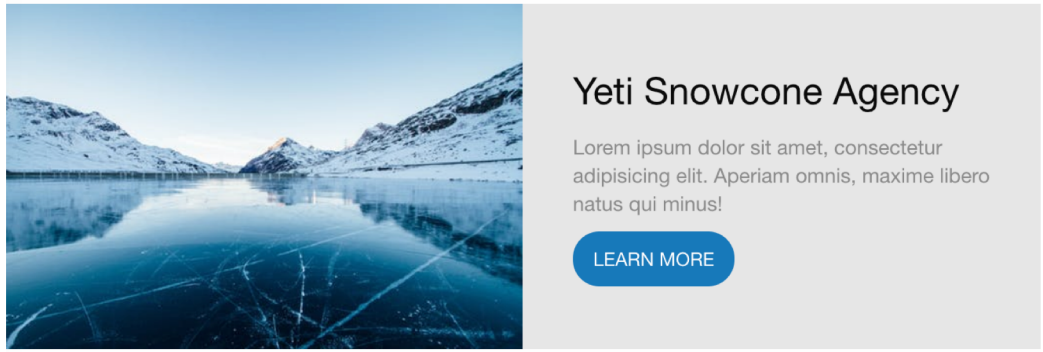
```yaml
marketing_site_content_section:
  label: Marketing Site Content Section
  description: A responsive content section that features equal height images and content
  variants:
    default:
      label: Default
      description: Default Marketing Site Content Section.
    highlighted:
      label: Highlighted
      description: Differently styled marketing site content section.
```

```twig
<div class="marketing-site-content-section {{ variant }}">
  <div class="marketing-site-content-section-img">
    {{ image }}
  </div>
  <div class="marketing-site-content-section-block">
    <h3 class="marketing-site-content-section-block-header">{{ header }}</h3>
    <p class="marketing-site-content-section-block-subheader subheader">{{ subheader }}
    {{ button }}
  </div>
</div>
```

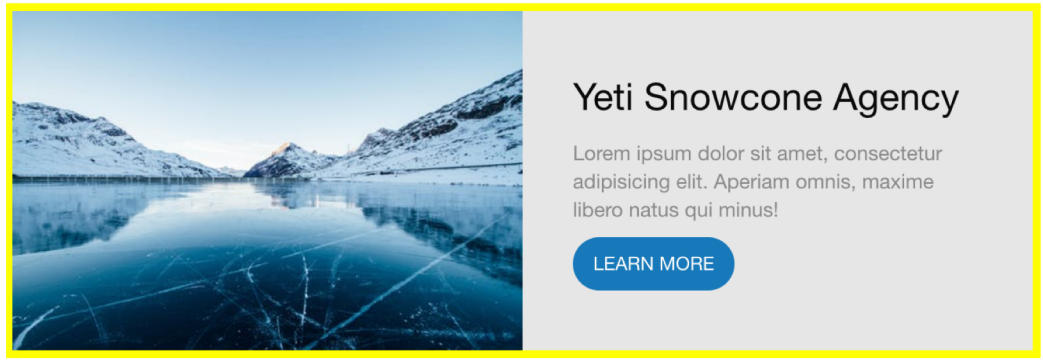
VARIANTS



Variant	Name	Description
Default	`default`	Default Marketing Site Content Section.



Variant	Name	Description
Highlighted	`highlighted`	Differently styled marketing site content section.



View Marketing Site Content Section as stand-alone

VARIANTS

Also, twig variables may be enough in some cases…

```
<div class="small-12 medium-3 columns">
  <i class="fa {{ icon_class }}" aria-hidden="true"></i>
  <h4 class="marketing-site-features-title">{{ title }}</h4>
  <p class="marketing-site-features-desc">{{ description }}</p>
</div>
```

Workflow

UI PATTERNS WITH AN EXTERNAL PATTERN LIBRARY

- Components begin life in Pattern Lab
  - Developing components that don't yet exist
  - Smaller sub-components
  - Larger scale prototyping
- Components 'graduate' to a UI Pattern in Drupal
  - Documented both in code and in pattern library
  - Predictable re-use anywhere a UI Pattern can be rendered

INTEGRATING WITH UI PATTERNS

- Many possible options:
  - The UI / various integration modules.
  - Programmatically
  - Twig functions
- **Pick an approach, stick to it. Document it.**

UI Patterns in a Contributed Theme

FOUNDATION PATTERNS THEME

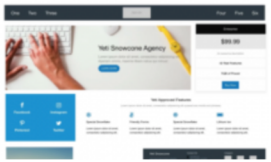
Exposes foundation building blocks – not opinionated about how they are used

Foundation Patterns

View | Version control

Posted by brianperry on *2 April 2017*, updated *30 September 2017*

This project is not covered by Drupal's security advisory policy.

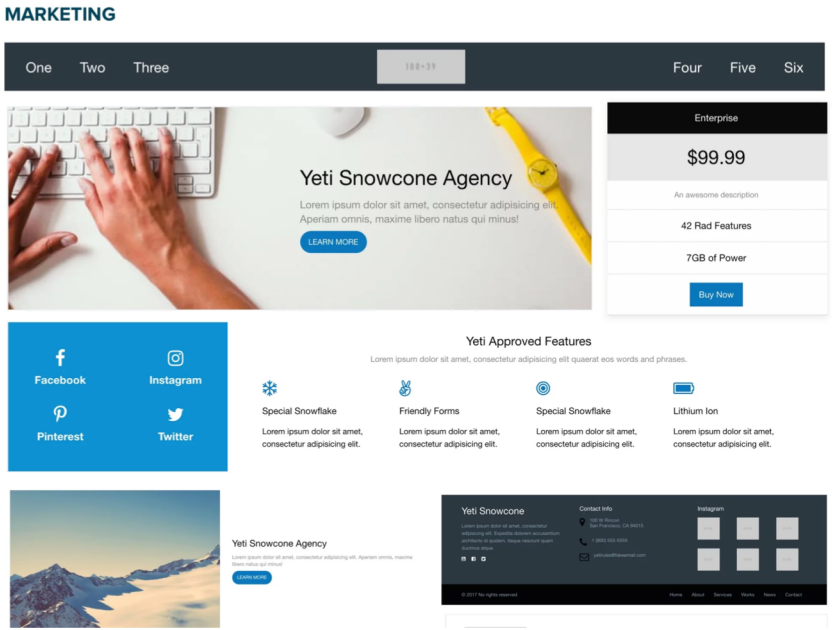


The Foundation Patterns theme is a subtheme of Zurb Foundation intended to implement Foundation components using UI Patterns. The primary purpose of this theme is to provide a way to quickly build sites using common building blocks from the Foundation framework, starting with the marketing building block kit. Secondarily, it is also intended to provide examples of how to take advantage of patterns defined by the UI Patterns module in a Drupal theme. Support for Pattern Libraries including Pattern Lab will also be provided.

Dependencies

- Zurb Foundation
- UI Patterns currently developing based on 8.x-1.x-dev
- Component Libraries

Installation



FOUNDATION PATTERNS CONFIGURATION MODULE

Pre-packaged paragraph types to jump start the use of the theme

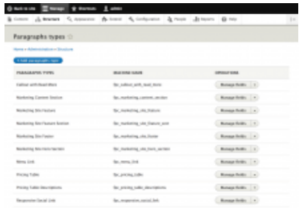
Foundation Patterns Configuration

View | Version control | Automated testing

Posted by brianperry on *29 April 2017*, updated *30 September 2017*

This project is not covered by Drupal's security advisory policy.

Pre-packaged configuration to jump start the use of the Foundation Patterns theme.



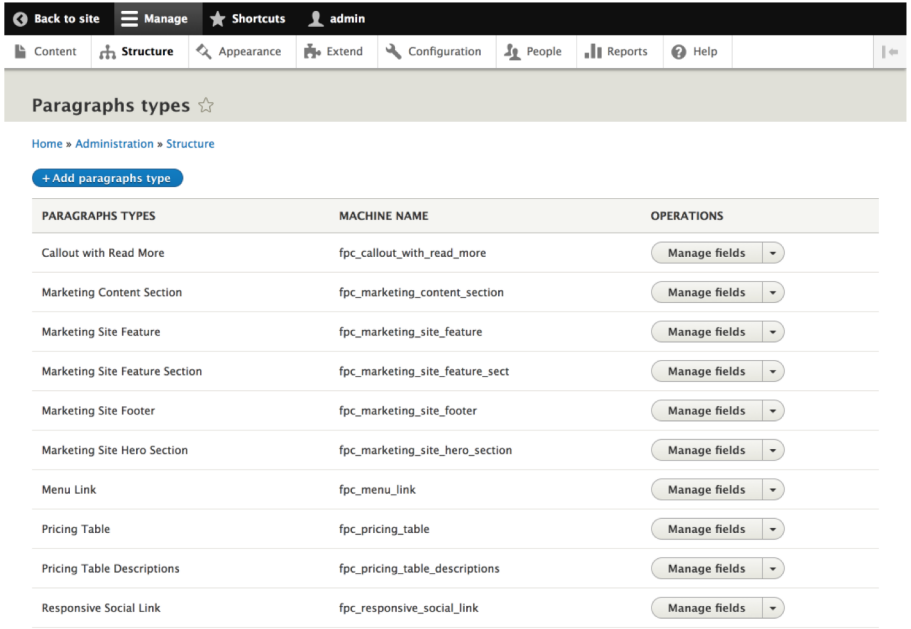
Dependencies

To use this module, the Foundation Patterns theme must be enabled.

Installation

For common building blocks shared by the various Foundation Building Block Kits, enable the Foundation Patterns Configuration module.

For components included in the Marketing Building Block Kit, enable the Foundation Patterns Configuration Marketing module (Foundation Patterns Configuration will also be enabled as a dependency.)



Automatic Pattern Library Component Discovery

UI PATTERNS PATTERN LAB / UI PATTERNS FRACTAL

Automatically create UI Patterns from your pattern library… really.

UI Patterns Pattern Lab

View | Version control | Automated testing

Posted by brianperry on *1 May 2018*, updated *7 May 2018*

This project is not covered by Drupal's security advisory policy.

The UI Patterns Pattern Lab module automatically discovers patterns defined in a Pattern Lab instance and makes them available to be used in Drupal as UI Patterns.

This module will recognize Pattern Lab patterns in any active module or theme's /templates directory, along with any paths defined as Twig Namespaces in your theme by the Component Libraries module. After enabling this module (which will also enable the dependencies ui_patterns and ui_patterns_library) and clearing your cache, patterns should be visible at /patterns and available to use with any of the UI Patterns integration modules.

This project would not exist without the work of Antonio De Marco who maintains the UI Patterns module and Pierre Dureau who created the UI Patterns Fractal integration that this project is based on.

UI Patterns + Fractal

View | Version control | Automated testing

Posted by tonystar on *16 January 2018*, updated *11 May 2018*

This project is not covered by Drupal's security advisory policy.

Integration of Fractal patterns as UI Patterns plugins.

Fractal is a tool to help you build and document web component libraries, and then integrate them into your projects. https://fractal.build/

UI Patterns defines and exposes self-contained UI patterns as Drupal plugins and generates a pattern library page to be used as documentation.
https://www.drupal.org/project/ui_patterns

You may also be interested about a Pattern Lab integration:
https://www.drupal.org/project/ui_patterns_pattern_lab

Supporting organizations:
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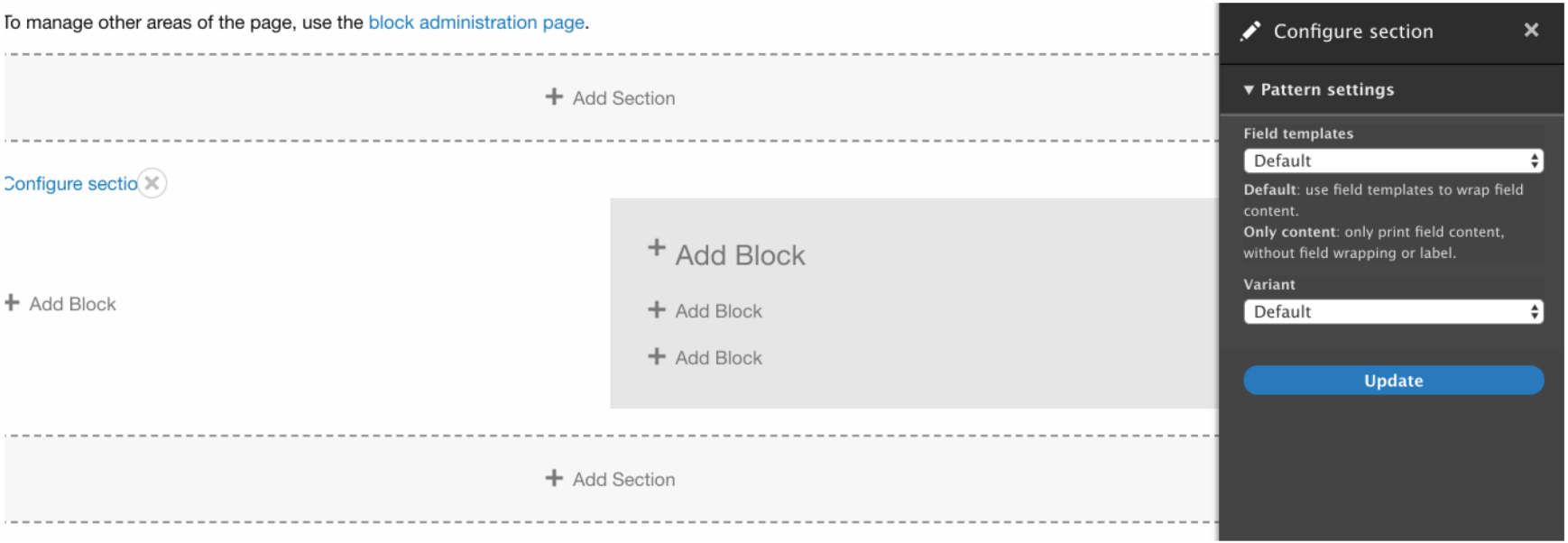
UI Patterns and Layout Builder

UI PATTERNS AND LAYOUT BUILDER

https://github.com/nuvoleweb/ui_patterns/pull/201



Layouts for page template, UI Patterns for components?

Resources

RESOURCES

- UI Patterns - Project Page
  - Links to documentation and github repo / issue queue.
- #ui_patterns on DrupalTwig Slack
- UI Patterns Talk at DrupalCon Vienna
- Foundation Patterns – Project Page
  - Github repo / developer sandbox
- UI Patterns Pattern Lab – Project Page
  - Documentation guide
- UI Patterns Fractal - Project Page

QUESTIONS?

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