Getting started with the Genesis Framework and WP Engine.

WHITE PAPER

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Introduction.

This guide provides an overview of the Genesis Framework and how-to information to help WordPress developers understand and make the most of this powerful theme framework.

What you'll learn.

In the following pages, you'll learn what the Genesis Framework is, how it works with WordPress, and how you can use it as the foundation for technically superior, speedy, and secure websites.

For turnkey projects, you'll learn how to use Genesis with a StudioPress child theme to efficiently roll out professionally-designed, mobile-responsive, and SEO-friendly websites for your clients.

In addition to learning what Genesis offers right out of the box, we'll discuss how you can extend the codebase through its API to create custom and complex web builds.

You'll also learn how to leverage WP Engine's hosting platform and developer workflow tools to help you establish an effective system for rolling out web projects.

At the end of this guide, we'll provide links to resources so you can go further in your development journey with the Genesis Framework and WP Engine.

What is the Genesis Framework?

The Genesis Framework is the world's most popular WordPress theme framework. The WordPress Codex defines theme frameworks in one of three ways:

- A "drop-in" code library used to facilitate development of a theme
- A stand-alone base/starter theme that is forked into a custom theme
- A parent theme template

The Genesis Framework falls into the third category. Since 2009 it's served as the foundation for more than 1 million WordPress sites and combines all of the security, design, layout, SEO, and performance features you need to power a professional website.

Genesis also offers the ability to safely and easily update and switch between themes at scale, enabling you to incorporate new technologies more easily.

How Genesis works with WordPress.

The simplest way to think of how Genesis works with WordPress is this: WordPress is the engine of your car, Genesis is the body and frame, and StudioPress themes are the paint job.

Whether you call it a framework or a parent theme, Genesis provides a layer of rich features on top of WordPress and serves as the foundation for child themes.

A child theme is a layer of code that sits on top of the Genesis Framework and is comprised mainly of the design elements for a site, but can also extend and modify the default functionality of the Genesis Framework.

In the same way you can extend WordPress by using action hooks and filters inside plugins, you can extend Genesis by using its extensive library of hooks and filters inside a child theme. Rather than build a theme from scratch, you can build a child theme with unique specifications while leaning on the framework for core site functionality.

Working with Child Themes

WP Engine offers a suite of StudioPress Themes, all built to run on the Genesis Framework. They are professionally-designed, mobile-responsive child themes that look great right out of the box, making it easy for you to deliver turnkey digital experiences for your clients.

You can also use a StudioPress theme as a starting point for a custom theme or build your own custom theme from scratch.

If you've written WordPress themes from scratch, created child themes as a way to customize a parent theme, or used starter themes like _s as a base, then you're familiar with the WordPress theme development principles outlined in the WordPress Theme Handbook.

What makes Genesis different from typical theme development is how you customize the features and markup on the page. Rather than directly editing the core theme files—like you would typically do in a custom theme—you use hooks and filters to remove or modify core Genesis features, and add your new features.

Later in the article we'll look at installing the Genesis Framework and child themes on a WP Engine site.

Building with Genesis

Developers have the option to build a site with:

- An "out of the box" StudioPress child theme (or a child theme from a third-party marketplace)
- A customized version of a StudioPress child theme
- A child theme built from scratch

How do you know which option is best for a given project? There are many factors to consider when selecting the right child theme for a project, but generally speaking, a project's complexity and budget can often help determine the best choice.

If you opt to build a theme from scratch, a great place to start is the Genesis Sample child theme. It will give you a good understanding of core styles needed for a site, how to interact with Genesis, and how to structure your code.

STYLES

While Genesis includes some base styles (i.e. HTML5 Reset, structure and layout), you'll include all of the styles needed for your child theme in your child theme's stylesheet.

Styling a Genesis child theme is the same as with any other WordPress theme. You can write standard CSS or compile Sass.

ORGANIZATION

There are only two files required for a Genesis child theme:

- `styles.css`
- `functions.php`

Of course, additional folders and files can be added as needed to organize your child theme. Many developers and agencies have their own preference for code organization, but you can look at the Genesis Sample child theme for ideas on how to structure your code.

TEMPLATES

Typically, WordPress theming means working with various templates as defined by the WordPress Template Hierarchy. Template tags are used within these templates to retrieve database content and template parts help developers break code up into smaller, bite-sized pieces.

The Genesis Framework follows a similar structure, but adds in 100+ action hooks and filters you can use to either change default output or add new functionality. This means that child theming with Genesis is more about utilizing hooks than it is about working with templates.

For example, let's say you're creating a child theme based off a theme downloaded from WordPress.org. If you wanted to change the footer, you'd create a new template file for your child theme named `footer.php` and that would override the `footer.php` file from the parent theme.

Conversely, with Genesis you'd use one of the many available hooks and filters to change whatever aspect of the footer you wanted—no new template needed.

CUSTOMIZATIONS

Where you add your code to a child theme depends on your preferred structure, but generally speaking, you can use the scope of a change to determine the best place.

For instance, code that's needed globally (i.e. a function to enqueue a stylesheet) could go in the child theme's `functions.php` file. This works well for small websites, but could get unruly for more complex builds. In those instances, consider organizing your code in a separate file that gets included in `functions.php`).

If you have code that's only needed for a specific template (i.e. an archive page), create that template and put your customizations there. The Genesis Framework follows the WordPress template hierarchy.

You can also use WordPress conditional tags to conditionally execute your code.

If you've done a lot of child theming before, doing things the "Genesis way" takes a mental shift. Once you're familiar with it, however, you'll love how quickly you can create custom websites.

Why Use the Genesis Framework?

There are so many options to choose from when building WordPress sites. In addition to traditional theming, you can use page builders, starter themes, or choose from various other frameworks.

In the following section, we'd like to share why Genesis is the preferred framework for WordPress developers and how it can help you deliver better web experiences for your clients.

Speed up the development lifecycle

As a developer, you want to perform your work as effectively and efficiently as possible. You're always looking for ways to improve your workflow, write DRYer code, and dial in your development tools.

New web development projects typically involve repetitive tasks, such as setting up development and hosting environments, initializing repositories, and getting up to speed on chosen technologies. WP Engine and the Genesis Framework empower you to give your projects a jump start, saving you both development time and cost.

With WP Engine, you get access to one-click tools, an SSH gateway, and version-controlled server environments for a more streamlined development workflow. By reducing the redundant tasks required to manage and deploy sites, you can move faster to produce and maintain cutting edge digital experiences.

Layer this with the tools and APIs inside of Genesis and you're ready to hit the ground running.

INCREASING YOUR CTR

Developers and agencies frequently use a starter (or base) theme as a foundation for projects. Packaging commonly used components in a starter theme enables developers to dive right into the custom parts of new projects rather than starting from scratch, saving time and repetitive coding.

The Genesis Framework is lightweight, with clean, optimized code and a smart design architecture, giving you the perfect foundation for your ultimate starter theme.

You can build your perfect starter theme from scratch, just the way you like it, or use the Genesis Sample Theme as a jumping off point.

A COMMON LANGUAGE

No more wasting time trying to orient yourself to a new theme created by a different developer for every single project. When you start your projects with the Genesis Framework and either one of StudioPress' consistently-structured child themes or your own custom starter theme, you'll become intimately familiar with the code, speeding up your development every time.

REUSABLE CODE

With Genesis you can easily reuse code across projects. You can create a library of code snippets, template files, and plugins with commonly used functionality and pull from that library as needed for new projects.

Your library grows with every project.

USING COPY SITE TO CLONE BASE PROJECT BUILDS

While we're on the topic of speeding up the development lifecycle, how about this:

What if you could set up your ideal starter site environment on WP Engine once and then replicate it for new projects again and again. Or maybe you have one existing client project that you'd like to use as a base for a similar project?

You can do it with Copy Site.

With WP Engine Copy Site, you can turn a site you developed into a template so you can reuse it across multiple projects. Think of it as instant repeatability for your most successful sites. Instead of starting a new site from scratch, you can start a project from a copy of an already proven site.

Go here to learn more about how you can speed up your workflow with Copy Site.

Access to community resources

With the world's most popular framework comes a large network of enthusiastic and experienced users. Not unlike the larger WordPress community, Genesis users, designers, and developers have grown into a vibrant community that provides peer-support on social media, educational content, and even in-person events.

As a developer working with the Genesis Framework, you can take advantage of a wide variety of free community resources and tutorials on the web to help build your understanding of working with Genesis as well as help you solve specific coding hurdles.

You also have access to a variety of helpful plugins when creating a site with the Genesis Framework and a StudioPress theme. Below are the most commonly-used plugins that complement Genesis-based themes:

- Genesis Simple Edits
- Genesis Simple Hooks
- Genesis Simple Sidebars
- Genesis Simple FAQ
- Simple Social Icons (not Genesis-dependent)

You can find a number of plugins made by both StudioPress and the Genesis community to enhance your website in the WordPress plugin repository as well.

Quickly scale your development resources

If you're a solo developer or part of a small agency, you know that your project workload is limited by time and personnel resources.

The popularity of the Genesis Framework means that there are hundreds of developers who work with the platform, many of them on a freelance basis. That means you can quickly ramp up your team size with freelance developers to meet project needs.

With a large pool of freelance Genesis developers available, there's no need to turn down that juicy project due to insufficient development resources.

We maintain a list of talented, reliable freelance Genesis designers and developers that you can hire to help you quickly scale your development resources without the commitment of long-term employees.

Keeping websites secure

As a developer, you know WordPress sites can be vulnerable to those who want to take your site down or exploit it for malicious reasons. Having a site hacked is an expensive, time-consuming hassle—not to mention a stressful situation for both you and your client.

We strive to make sure the Genesis Framework has the best security possible. We brought security expert and core WordPress developer Mark Jaquith in to review Genesis and, with his guidance, we built our framework to follow all WordPress security best practices.

The security efforts don't stop with the code. Combined with WP Engine's platform-level security measures, you have the freedom to develop and operate your website within the scope of our secured environment.

DISK WRITE PROTECTION

Malicious code can embed itself into a website by writing to the file-system. This occurs when a vulnerability is present in a theme or plugin that leaves the door open for malicious injection. The WP Engine environment limits the processes that can write to disk. So even if you're using code with a vulnerability, it is harder for it to be exploited.

DISK WRITE LIMITATIONS

All attempts to write to the disk are logged so that we can identify both malicious and non-malicious code. For a list of disk write privileges that are allowed vs. blocked, please contact our support team directly.

DISALLOWED PLUGINS

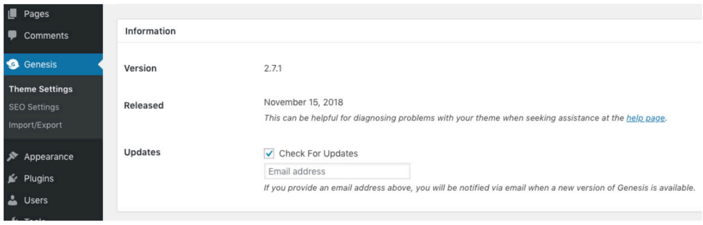
Some plugins may expose a website to vulnerabilities. Most of the time this is unintentional, but we still have to draw a line in the sand. Our system scanner searches for these plugins and automatically disables them. Besides disabling plugins for security reasons, plugins can also be disallowed for performance reasons. Our comprehensive list of disallowed plugins (along with explanations as to why they are disallowed) can be found here.

SAVE TIME AND ALWAYS BE UP-TO-DATE WITH MANAGED PATCHING AND AUTO-UPDATES

Do you provide ongoing support services for your clients? We'll never make you look bad by sending an upgrade that kills your site or one of your customers' sites.

At WP Engine, you get the assurance that we automatically upgrade WordPress installs whenever minor patches are released. And when a major update is released, we put it through rigorous testing before we recommend an upgrade.

You can also stay on top of Genesis updates with automatic notification. We test all updates thoroughly before release, so you're never playing the guinea pig. To enable available update notifications, just check the option from **Genesis > Theme Settings** in your site admin.



Information

Version 2.7.1

Released November 15, 2018

This can be helpful for diagnosing problems with your theme when seeking assistance at the help page.

Updates ☑ Check For Updates

Email address

If you provide an email address above, you will be notified via email when a new version of Genesis is available.

You'll love the way the framework works with child theme designs to keep the look of a site exactly the way you want it while letting you quickly update the important code that runs in the background.

KEEP DATA PRIVATE WITH EASY SSL

SSL (secure sockets layer) technology protects your clients' and your site visitors' private data. SSL also gives you the added benefit of improved Google rankings (Google ranks websites protected with SSL slightly higher than those that are not). Whether you want to use Let's Encrypt™ free single-domain certificate or purchase a RapidSSL™ wildcard domain certificate, WP Engine makes installing an SSL certificate for your sites and your clients' sites quick and easy through the User Portal.

Building an ecommerce site that accepts credit card information? SSL makes sure that data stays secure. WP Engine offers SSL protection across all of our plans so you can keep data private.

Optimizing Performance

Nothing slows down a site like bloated code, but we obsess about making Genesis cleaner and more lightweight. Web page load times are usually discussed in seconds, but page load times for sites built on Genesis can often be measured and discussed in milliseconds. And today, that's an essential difference.

Combine the lightwork Genesis Framework with WP Engine's built-in optimizations like caching and Content Delivery Networks (CDN) and you've got the recipe for a blazing fast site.

CACHING

When it comes to your site's speed, there is nothing more effective for optimizing WordPress than utilizing caching. At WP Engine we offer several caching layers in our Evercache system to help your site perform at its peak. Building cacheable sites allows our system to load static content — e.g. images, CSS, and Javascript files — from a dedicated caching source. Loading this content from the cache is much faster than loading it directly from the server.

SERVE CONTENT SWIFTLY WITH ONE-CLICK CDN

Another quick win for optimizing WordPress to increase the speed of your site is to use a CDN.

Speed is a major measurement of site performance. You want content to load faster. To enable that, we offer a single-click CDN (content delivery network) that stores a site's static content locally on servers all over the world and then serves that content from the ones closest to your visitors. This means content loads faster, and sites can scale more effectively.

Do you anticipate a lot of international visitors? The CDN makes sure a site is speedy no matter where a visitor comes from. CDN is available via one-click through the WP Engine User Portal.

CDN support is included at no extra charge for users of our Professional and Business plans. Personal plan clients can add CDN service for a small monthly fee.

Technical SEO that boosts site rankings

You might typically think of SEO as something that only applies to content. While it certainly does, truly great SEO begins at a code level. Search engines are just computers, after all, and computers love logically-organized, clearly-defined source code.

Google, for example, has significantly advanced its processing capabilities in recent years, and yet, it is still a computer and it operates in binary code.

According to Rebecca Gill, the Vice President of Digital Marketing Services at Emagine, default HTML can't provide enough data points to help search engines render, digest, and utilize web content in the same manner as a human. A strong code base can and will help alleviate this issue.

The onset of HTML5 markup, Semantic language, and Schema vocabulary within Structured Data helps the search engines view content more like a human, says Gill. This advanced code allows the search engines to not only interpret content in more depth, it allows the search engines to return richer results to users.

> ***Quality WordPress themes are no longer a luxury. They are a requirement for ranking within search engine results.***
>
> ***As we move into 2019, we will see the requirements from Google grow and the need for such coding to become a more integral part of successful marketing initiatives.***
>
> **Rebecca Gill**,
> Vice President of Digital Marketing Services at Emagine

With HTML5 Markup and support for Schema.org, the Genesis Framework and our child themes give search engines what they want.

HTML5

Both the Genesis Framework and all StudioPress themes available in your User Portal include HTML5 markup, the latest evolution of the industry standard for HTML.

- The benefits to web developers are numerous and include:
- Better cross-browser compatibility
- Greatly improved readability with semantic markup
- Alternative to Flash and Silverlight
- Native embed support for audio and video
- Native rendering for SVG, Canvas, WebGL, and CSS3 3D
- More efficient connectivity between client and server
- Present rich, device-aware features and experiences via the Geolocation API

With the Genesis Framework, you're ready to take advantage of all HTML5 has to offer your website or web application.

MICRODATA

Genesis supports Schema.org, which allows you to output microdata in your site's code. This enhances your site's search engine optimization and results display through proper classification of the most important and defining elements on your pages.

By default with Genesis, all posts entries are classified as CreativeWork. As you know, WordPress is used to publish all types of content, not just blog posts. Through Genesis' markup API you can reclassify any post type. As an example of using the markup API, here's how you could re-classify blog posts as the BlogPosting schema type.

Foundation for Accessible Websites

Do you develop sites for academic institutions, government entities, or online retailers? Many businesses and institutions are now legally required to have websites compliant with web accessibility guidelines (the current standard is WCAG 2.0).

In WordPress, a big part of accessible design depends on the theme, where semantic markup and clean code is key. The Genesis Framework and many StudioPress child themes available in your User Portal are accessibility-ready. That means you get the following accessibility features out of the box:

- Semantic markup with HTML5
- Responsive drop-down menus
- Tabbed navigation
- Skip links
- Aria roles and labels for user interface components (i.e. navigation, form fields, buttons)

When developing custom child themes, you have the ability to add theme support for core Genesis accessibility features. And remember…What's good for web accessibility is also good for SEO, so even if your clients don't require WCAG 2.0 compliance, you can offer it as a benefit.

Please visit this article to learn how to implement accessibility features in a child theme.

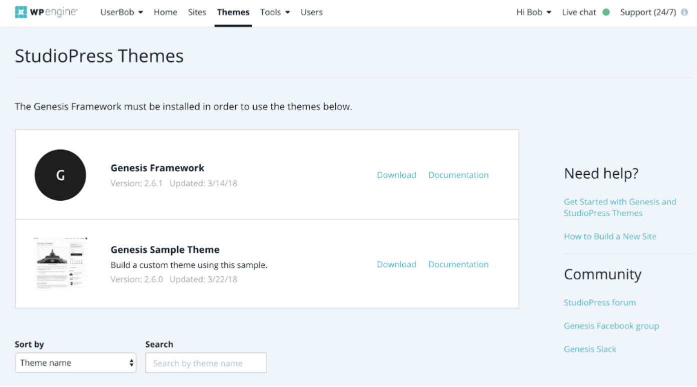
Getting Started with Genesis + WP Engine.

WP Engine offers the powerful and performant Genesis Framework and premium StudioPress Themes to all customers on its Startup, Growth, Scale, and Premium plans*.

** Those still on legacy WP Engine plans will need to upgrade to one of these listed plan types in order to take advantage of the Themes and Framework.*

Genesis + the WP Engine Portal

Both the Genesis Framework and StudioPress child themes are available to download directly from your WP Engine User Portal. Along with the download files, you'll find usage and setup documentation for Genesis and all available child themes.



StudioPress Themes

The Genesis Framework must be installed in order to use the themes below.

Genesis Framework
Version: 2.6.1 Updated: 3/14/18

Genesis Sample Theme
Build a custom theme using this sample.
Version: 2.6.0 Updated: 3/22/18

Need help?

Get Started with Genesis and StudioPress Themes

How to Build a New Site

Community

StudioPress forum

Genesis Facebook group

Genesis Slack

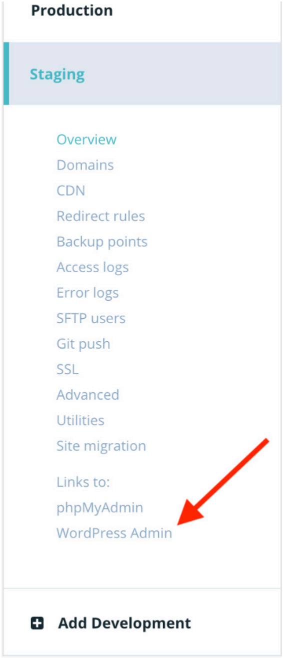
Please visit this article for orientation and instructions for using the WP Engine Portal.

Installing and activating Genesis or a Child Theme

To get started, we recommend copying your production site to a staging or development environment.

In your User Portal, navigate to the Sites page and select the site and environment where you'd like in install Genesis. We recommend copying your production site to a staging or development environment before proceeding.

Here are detailed instructions to create staging and development environments, if needed. Once you've selected the site and environment you want, click the WordPress Admin link to access the WordPress admin area for the install.



Once you're in the WordPress admin area of a site, Installing the Genesis Framework and a child theme follows the same process for installing any WordPress theme, except that you're essentially installing two themes. First, you install (but do **not** activate) the Genesis Framework and then you install and activate a child theme.

Please note that the Genesis Framework is not intended to run as an active theme. Styles are kept purposefully minimal to discourage using Genesis as an active theme.

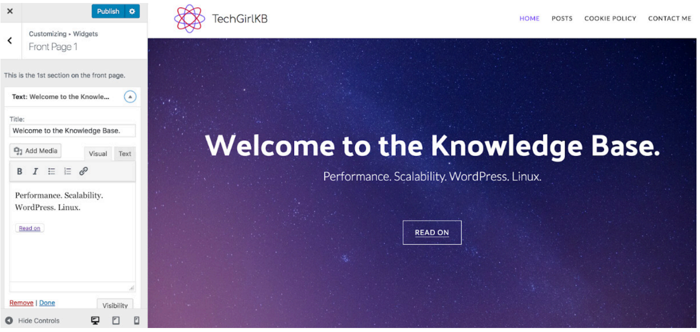
For step by step instructions, please visit this tutorial on installing and activating Genesis.

Working with the Customizer

Genesis works with the WordPress Customizer API to give users the ability to live-preview changes to their site appearance. By default, StudioPress Themes are configured to use Customizer fields like background images and colors, logos, widgets, and Front page settings.

As a developer, you can further extend Customizer options for StudioPress Themes or your custom child themes by using the Customizer API. This gives you full control over the theme options your clients are able to access and change.

You can see the Customizer in action from a user perspective by downloading, installing, and activating any StudioPress Theme from your User Portal. Once a child theme is installed and active, you can customize the appearance using the Customizer and live-preview your changes.



Customizing ▸ Widgets

Front Page 1

This is the 1st section on the front page.

Text: Welcome to the Knowle...

Title: Welcome to the Knowledge Base.

Performance. Scalability. WordPress. Linux.

Read on

Welcome to the Knowledge Base.

Performance. Scalability. WordPress. Linux.

If you'd like to register custom controls and settings in your child themes, here is detailed documentation for working with the Customizer API. For an example of how to specifically integrate the Customizer with a Genesis child theme, check out this file from the Genesis Sample Theme.

Setting Up a Site with a StudioPress Theme

Each StudioPress theme comes with documentation you can use for configuring theme settings and widgets to look like a theme's demo. This theme-specific documentation can be found on the Themes page of your User Portal.

The documentation also includes a link to a Sample Content XML file–this file can be imported via **Tools > Import** in your WordPress admin to provide some content to use when building a new site.

Using Genesis SEO features

Earlier we mentioned that great SEO starts at a code level and explained how Genesis excels at technical SEO. In addition to the code base, the Genesis Framework includes built-in SEO tools that make it easy for you to optimize a website.

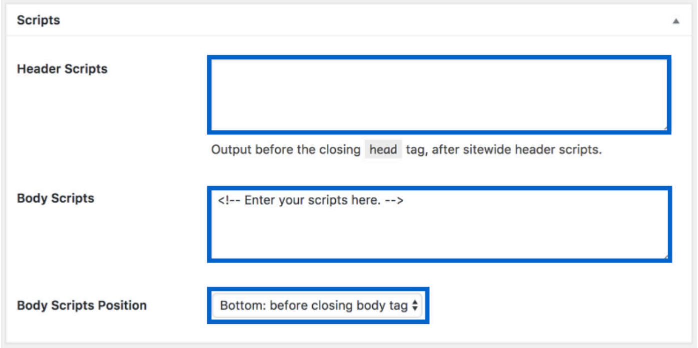
Sitewide SEO settings are available in the Customizer via the **Theme SEO Settings** panel. Additionally, each page, post, and term has its own individual SEO settings. The default settings are recommended for most users, but you can adjust any of the settings if you like.

If you prefer to use a different SEO plugin, no worries. Genesis recognizes most popular SEO plugins and disables Genesis SEO when any of those plugins are active.

For more detailed information, please visit this tutorial on using Genesis SEO settings.

Adding Custom Scripts

Genesis makes it easy to add scripts, such as tracking and analytics scripts, to the header and footer of your website. You can also inject custom scripts in the header or body of individual posts and pages.



Scripts

Header Scripts

Output before the closing head tag, after sitewide header scripts.

Body Scripts

<!-- Enter your scripts here. -->

Body Scripts Position: Bottom: before closing body tag

With Genesis as the theme framework, any scripts you add to a site will remain, regardless of which child theme is active.

For usage instructions, please visit this tutorial for adding custom scripts to your site.

Going Further with Genesis + WP Engine

While the above hopefully offers a helpful introduction to getting started with the Genesis Framework and WP Engine, there are myriad other resources available, spanning from intro-level material to the more complex.

As mentioned above, the Genesis community is a vibrant one and a good starting point for questions about Genesis. Social media channels such as Facebook and other web forums are good places to find peer support from members of the community as well as educational content, and even in-person events.

Developers working with the Genesis Framework can also take advantage of the many free community resources and tutorials on the web to help better understand how to work with Genesis as well as solve specific coding hurdles.

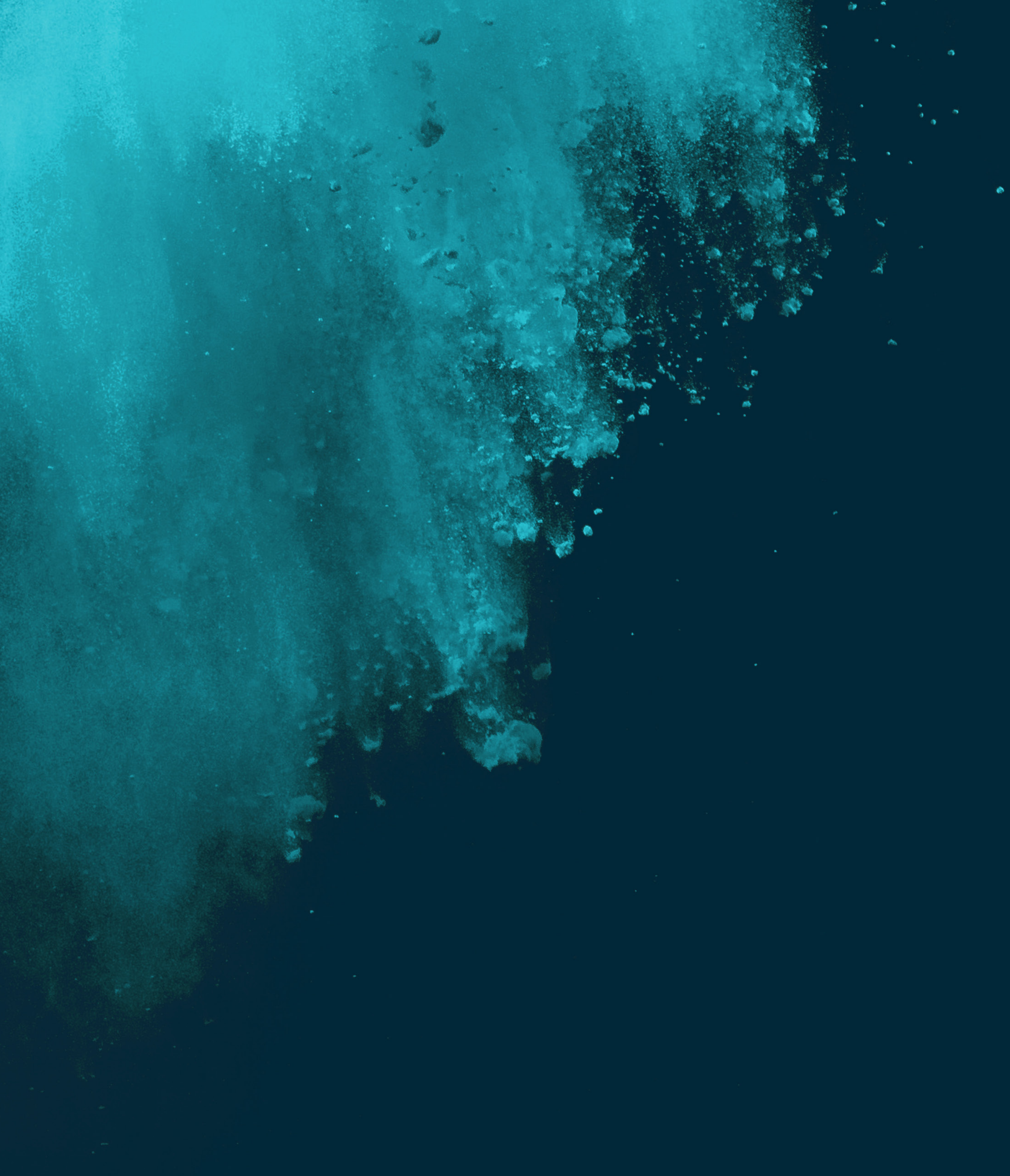
Below are a few additional resources that can take you even further with Genesis and WP Engine. Enjoy, and happy building!

Genesis Action Hooks Reference
Genesis Filter Reference
Flexible WordPress Development on Your Terms

About WP Engine.

WP Engine is the world's leading WordPress digital experience platform that gives companies of all sizes the agility, performance, intelligence, and integrations they need to drive their business forward faster. WP Engine's combination of tech innovation and an award-winning team of WordPress experts are trusted by over 70,000 companies across 130 countries to provide counsel and support, helping brands create world-class digital experiences. Founded in 2010, WP Engine is headquartered in Austin, Texas, and has offices in San Francisco, California; San Antonio, Texas; London, England; Limerick, Ireland, and Brisbane, Australia.

www.wpengine.com



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