



Lambda-CDM Climbing Walls – White Paper

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Introduction

Background of Indoor Climbing Industry

Over the past few decades, climbing has transformed from a niche sport into a global phenomenon attracting participants from various ages and demographics. The accessibility of indoor climbing has significantly lowered the entry barrier, allowing people from all walks of life to engage in the sport. This surge in popularity has led to the rapid expansion of climbing gyms worldwide, fostering new communities that consist primarily of gym climbers. These modern climbers, who often have no outdoor climbing experience, are drawn to the social and fitness aspects of indoor climbing, contributing to the sport's diverse and inclusive culture. As the indoor climbing industry evolves, it increasingly resembles the hospitality industry. The core value of a climbing gym is its routesetting. The quality of service in a climbing gym reflects the quality of the routesetting—a good climbing gym is one with good routesetting.

Challenges in Routesetting

The key to a successful climbing gym lies in good routesetting. The routesetter is like the chef in a fine restaurant, crafting the experience that defines the gym's reputation.

The growing popularity of indoor climbing and the rapid expansion of the industry have made routesetting management challenges:

Growing demand: The number of climbing gyms has increased tremendously in recent years, naturally requiring an increase in the in-house routesetting force to meet the demand for quality routesetting in all gyms.

Served locally: Not every climbing gym can rely on the services of experienced and renowned routesetters. Their routes can only be climbed at the gyms where they are physically present.

The work of the best routesetters is unrecognized: Routesetting is both a social activity and a form of art, and like many creative fields, the Pareto Principle applies—a small percentage of routesetters garner the majority of recognition, popularity, and success. These top routesetters, as influencers, may generate the most engagement and have the largest following. However, there is currently no platform or ecosystem where climbing gyms can showcase the work of this elite group of routesetters.

How can climbing gym owners be sure that the routesetters in their gym are the best? In terms of information exchange, we are still in the Middle Ages—routesetting expertise doesn't spread easily across different gyms. The network effect in the digital era has fueled the growth of many industries and turned countless talents into famous, successful figures. But this hasn't yet reached routesetters.

Routesetters should become rock stars, with everyone having the chance to experience the highest level of their craft. Lambda-CDM Climbing Walls creates the necessary opportunities

and aims to be the platform that generates the network effect for the global growth of routesetting.

Lambda-CDM Climbing Walls Overview

The mission of Lambda-CDM Climbing Walls

The mission of Walltopia Lambda-CDM Climbing Walls is to propel climbing into a truly global sport by sharing routesetting expertise and, consequently, the climbing experience itself. The mission is to establish a platform that fosters an interconnected global climbing community, resolving the limitations of location-based routesetting. By creating a platform where every climbing gym can access the best routes, the Lambda-CDM Climbing Walls aims to make climbing experiences accessible to all. The mission includes creating a marketplace for routesetting, enabling routesetters to monetize their portfolios and gain global recognition. This initiative aspires to make routesetters internationally renowned, creating a win-win-win scenario for gym owners, routesetters, and climbers.

The Concept in a Nutshell

Walltopia Lambda-CDM Climbing Walls is a universal platform that offers climbing gym owners and managers access to an online database of quality routes. It allows routesetters to sell their creations to climbing gyms globally and provides climbers with a diverse selection of routes set by routesetters worldwide.

Lambda-CDM Climbing Walls relies on the structure of:

1. **Set of Climbing Wall Modules:** Pre-designed and engineered Lambda-CDM Climbing Wall modules, including boulder walls, rope walls, and training boards created by the Walltopia design team in accordance with the latest climbing wall design trends. The modules are equipped with the **eWalls LED Kit**, allowing route control (setting, activating, and sharing) via the **eWalls application**.
2. **eWalls – Routesetting and Route-activating and Sharing App:** eWalls, for routesetters, climbers, and gym owners, allowing the creation and replication of routes in any climbing gym equipped with Lambda-CDM Climbing Wall Modules.
3. **Routes Marketplace:** A feature of the eWalls app – a repository of climbing routes, which are copyrighted content owned by routesetters or created collaboratively with gyms. The business model includes selling or temporary usage, much like the streaming of digital content products.
4. **Database of Applicable Climbing Hold Sets:** A comprehensive database of applicable climbing hold sets from any brand or producer.

Lambda-CDM Climbing Wall Modules

The Lambda-CDM Climbing Wall Modules are designed to cater to all climbing disciplines, including boulder walls, rope walls, and training boards.

Driven by our love for science, the Lambda-CDM Climbing Walls system is created to bend the time-space continuum of route setting in gyms worldwide. That's why we have named them after famous scientists who have changed the way we perceive the world with their innovations and discoveries.

eWalls Application

eWalls for Routesetters

- **Route Creation and Management:** Set and manage routes using chosen holds from the database.
- **Routes Marketplace Platform:** Stream or list routes for purchase in the marketplace, with options to set prices and select usage rights.
- **Holds Database:** Access a complete database of all available holds.
- **Multi-Location Management:** Manage routesetting at multiple locations from a single platform.

eWalls for Climbing Gym Managers

The eWalls desktop app serves gym owners and managers with a robust route management system and detailed stats about user activity in the climbing gym.

- **Route Management:** Easily manage the routes in your gym and notify users about new routes.
- **Routes Marketplace Platform:** Access all streaming and for-sale routes available for the Lambda-CDM Climbing Wall Modules installed in the gym with filters and sorting options. Review detailed statistics for all Lambda-CDM Climbing Wall Modules and associated routes.
- **Holds Database Management:** Manage the climbing gym's hold storage with a database suitable for the Lambda-CDM Climbing Walls, ensuring efficient and organized access to climbing holds.
- **Route Popularity and Feedback:** View statistics about the popularity of routes in the gym and receive feedback on clients' preferences.

eWalls for Climbers

- **Gym Overview:** See an overview map of the gym, filter and sort the routes you prefer, locate and activate them in the climbing gym.
- **Route Finder:** Easily find the routes available in front of you within your preferred grade range.
- **Progress Tracking:** Logging of climbs, tracking of progress, and comparison of achievements with peers.
- **Feedback:** Provide feedback to the gym to assist in enhancing routesetting. Though often overlooked, this feature ensures that more preferred climbing experiences are made available.

Benefits Analysis

Benefits for Routesetters

The Lambda-CDM Climbing Walls allows routesetters to develop an online portfolio, showcasing their skills and creativity to a global audience. This platform enables routesetters to monetize their everyday work, creating a longtail selling effect where their routes continue to generate income over time. By reaching a wider market and receiving feedback from climbers worldwide, routesetters can enhance their reputation and grow their professional opportunities.

Benefits of Walltopia Lambda-CDM Climbing Walls for Routesetters:

- **Monetization:** Listing routes in the marketplace allows revenue generation from purchases and streams, turning routesetting expertise into a long-term income source.
- **Global Reach and Industry Recognition:** Creating and sharing routes online allows access to climbing gyms globally, expanding reach and building industry recognition.
- **Customer Feedback:** Reception of valuable feedback about routesets directly from climbers enhances routesetting quality.

Benefits for Climbing Gyms

Climbing gym chains are among the groups that benefit most from the Lambda-CDM Climbing Walls system. The system enables routesetting to be streamed and replicated across multiple locations, providing these chains with a powerful tool for smooth expansion and consistent management. With the ability to manage routes remotely and without needing in-house routesetting teams, Lambda-CDM Climbing Walls expands the traditional concept of a climbing facility to include corporate offices and other mixed-use locations.

Climbing gym chains

Climbing gym chains with facilities in different cities and a committed clientele benefit from access to a vast catalog of high-quality routes that provide a consistent climbing experience across their multiple locations. This ensures the quality of routesetting, maintains the management concept, and gathers valuable information on gym dynamics based on route usage.

School and University Climbing Gyms

School and university climbing gyms, which may not have the resources to maintain top-quality routesetting staff, can use the Lambda-CDM Climbing Wall Modules to ensure their students have access to set routes professionally. This makes the climbing experience both educational and enjoyable, without the need for extensive in-house expertise.

Climbing events

Climbing events can rely on the best routesetters using the Lambda-CDM Climbing Walls to design competition routes. This ensures high-quality routes for climbers and highlights the routesetters' talents on a prominent stage, further enhancing their professional standing. Sport event organizers can host the same competition on the same routes in different venues worldwide letting local climbers test their abilities on, for example, the latest World Cup final.

Offices and Distant Facilities

Lambda-CDM Climbing Walls open new possibilities for climbing gyms in places like corporate offices, schools, and distant or remote locations, enabling high-quality routesetting without the need for an in-house routesetting team. This redefines and expands the concept of a climbing facility.

Benefits of Walltopia Lambda-CDM Climbing Walls for Climbing Gyms:

- **Immediate Access to Quality Routes:** Instant availability of an extensive online database of high-quality routes.
- **Greater Diversity:** Provision of a wide variety of routes for clients without significant costs.
- **Route Replication:** Seamless duplication of routes across multiple gym locations.
- **Support Expansion Plans:** Reuse of the entire routesetting portfolio to seamless expansion across multiple locations.
- **Customer Feedback:** Collection of direct feedback from customers about the routes in the gyms.
- **Efficient Communication:** Effective communication with clients through the mobile app, including notifications about new routes.

Benefits for Climbers

Climbers benefit from the Lambda-CDM Climbing Wall Modules by gaining access to routes set by the best routesetters in the world.

- **Diverse Selection:** Access to a wide variety of routes set by the best routesetters worldwide, available at the local gym.
- **Progress Tracking:** Logging of climbs, tracking of progress, and detailed statistics on training.
- **Updates:** Gym news and notifications about newly available routes.
- **Feedback:** Submission and rating of routes provide valuable insights to the gym and award routesetters value points.

Case Studies and Early Adoption

As of August 2024, there are 47 modules across 8 countries:

- **Belgium:** Maniak Charleroi, Black Box Boulder
- **Italy:** Deva Wall, Blockland, Orobica Climbing
- **Spain:** Indoorwall Jaca, Indoorwall Villanova, Sharma Climbing Madrid, Sputnik Roza
- **Mexico:** Adamanta II
- **Sweden:** Klätterhuset Luleå
- **USA:** Inner Peaks, Alta Climbing and Fitness

Implementation Guide

Steps to Incorporate the system:

1. **Incorporate Modules:** Integrate Lambda-CDM Climbing Wall modules into your climbing gyms.
2. **Use Standardized Climbing Hold Sets:** Utilize the standard sets of holds on these modules to create routes.
3. **Share and Replicate:** Share your routes on the eWalls app, set them in different locations, and receive valuable feedback from your clients.

Future Developments and Call to Action

Climbing Hold Brands: We invite you to join us in standardizing a selection of your holds for the Walltopia Lambda-CDM Climbing Walls. To ensure seamless integration, each hold must have two features: a visual physical mark for orientation and a transparent part (transparent base for best results) that allows the grid point light to shine through, making the hold easily recognizable when illuminated by the climber – similar to what we have been using for training boards. Walltopia will directly coordinate with Composite-X to implement these harmonization features in the future production of climbing hold brands manufactured by Composite-X.

Gym Owners: Contact us at sales@walltopia.com for a detailed quote on integrating the Lambda-CDM Climbing Walls into your facilities. Enhance your climbing offerings with high-quality routes that provide a consistent experience across all locations.

Routesetters: Reach out to us at sales@walltopia.com for early access to test the app and provide feedback. Your insights will help us refine and enhance the platform, ensuring it meets the needs of routesetters and climbers alike.

Appendices

Glossary of Terms

(ordered alphabetically)

eWalls — A routesetting, route-activating, and sharing app for routesetters, climbers, and gym owners. It allows the creation, replication, and management of routes in any climbing gym equipped with Lambda-CDM Climbing Wall Modules. eWalls is a core element in the Lambda-CDM Climbing Walls system.

Lambda-CDM climbing walls — A universal platform developed by Walltopia for optimizing and standardizing routesetting in climbing gyms. It includes climbing wall modules, eWalls app, and a comprehensive database of routes and climbing hold sets. The name "Lambda-CDM" is inspired by the standard model of Big Bang cosmology, symbolizing the system's vision as a standard and universal solution for developing and sharing routesetting within climbing gyms.

Lambda-CDM climbing wall modules — Climbing wall modules designed by Walltopia, including boulder walls, rope walls, and training boards, designed to enable consistent and replicable routesetting across climbing gyms.

Pareto Principle — A term describing the observation that roughly 80% of effects come from 20% of causes, also known as the 80/20 rule.

Pareto, Vilfredo. 1897. Cours d'économie politique. Vol. 2. Rouge.

routes marketplace — A feature of the eWalls app, this is a repository of climbing routes that are copyrighted content owned by routesetters or created collaboratively with gyms. It facilitates the selling or temporary usage of routes.

routes streaming — A business model within the Routes Marketplace where climbing routes are available for temporary usage, allowing gyms to offer a diverse selection of routes without permanent purchase.

standardized climbing hold sets for Lambda-CDM climbing walls — Pre-defined sets of climbing holds that are compatible with the Lambda-CDM Climbing Wall Modules, ensuring consistency and ease of use in routesetting across different gyms.

Module Names and Nomenclature

1. **"Einstein"** — 84.3 m²
2. **"Newton"** — 88.4 m²
3. **"Curie"** — 110.2 m²
4. **"Hawking"** — 119.2 m²
5. **"Tesla"** — 88.8 m²
6. **"Bohr"** — 72.2 m²
7. **"Feynman"** — 104.1 m²
8. **"Galileo"** — 99.6 m²
9. **"Dirac"** — 97.5 m²
10. **"Heisenberg"** — 95.4 m²
11. **"Hubble"** — 100.8 m²
12. **"Copernicus"** — 77.1 m²
13. **"Lemaître"** — 82.5 m²
14. **"Ohm"** — 79.1 m²
15. **"Faraday"** — 74.1 m²
16. **"Maxwell"** — 78.3 m²
17. **"Webb"** — 72.6 m²
18. **"Lambda (Dark energy)"** — 61.2 m²
19. **"CDM (Cold dark matter)"** — 62.7 m²
20. **"General relativity"** — 65.2 m²
21. **"Redshift"** — 64.5 m²
22. **"Ia Supernovae"** — 63.3 m²
23. **"Cosmic inflation"** — 64.8 m²
24. **"CMB (Cosmic microwave background)"** — 63 m²
25. **"Anisotropic horizon problem"** — 56.3 m²
26. **"Recombination"** — 75.9 m²
27. **"Big Bang"** — 163 m²
28. **"Black hole"** — 63.7 m²
29. **"Pillars of Creation"** — 92.2 m²
30. **"String theory"** — 113.4 m²
31. **"Higgs boson"** — 112.4 m²
32. **"Neutrino"** — 150.9 m²
33. **"Quark"** — 282.4 m²
34. **"Lepton"** — 95.4 m²
35. **"Photon"** — 99.4 m²
36. **"Electron"** — 148.5

Contact Information

For requests, please email us at sales@walltopia.com or use the contact form at walltopia.com/contact-us.

For more information, visit the product page at walltopia.com/products/lambda-cdm-climbing-walls.

walltopia.com