

Recreating spaces

# GRAFT

*in architecture*

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Jin-Ho Park /  
Design Research & Innovation Laboratory

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Preface by

Eric Oliver Moss

Text and Projects by

Jin-Ho Park

Design Research & Innovation Laboratory



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# Preface

The contemporary science of Horticulture often involves the opportunity to create a new plant species by joining existing plant types with "foreign" components. That technique is called grafting. The graft hypothesis suggests that the combining of an existing condition with a new condition has the potential to create a hybrid typology that unites the assets of the original form with the assets of the "grafted on" addition while diminishing the liabilities, and, as a result, to invent an heretofore unimagined plant species.

Presumably the new, unified plant form will have a capacity to respond to the environment well beyond that of its pre-grafted parts.

Korean architect and scholar Jin-Ho Park suggests this strategy of grafting is equally relevant to the discussion of the origins of new architecture.

Jin-Ho Park argues that the Graft concept makes possible a new and infinitely broad category of building hybrid possibilities that will belong neither to their original histories nor to the conventional labels of design discussion.

By implication Jin-Ho Park is arguing for a conceptual strategy of design that supersedes the obvious list, typically referenced to describe new types of architecture. That usual list would include Modern or neo-Modern Architecture, with origins in the teens and 1920s in Europe; the residue of Post-Modern Architecture that belongs largely to the 1980s; Deconstructive Architecture, also from the 1980s; expressed Digital Coding, originating in the 1990s; and the body of work that prioritizes an expressed language of Sustainability, so-called Green Architecture.

Without debating the efficacy of these labels, Mr. Park, insists there is another, perhaps more complex way to see the emergence of new design prospects in architecture. It's an hypothesis which unites an urban argument for sustaining the history and scale of the existing city; a green argument which makes a case for altering buildings and urban areas by adding to or subtracting from the huge stock of existing structures rather than demolishing and replacing those structures; and an intricate stylistic case for revising these existing structures in a way which produces unique hybrid building types which can never be categorized as simple exemplars of one stylistic choice or another.

Grafting, as Jin-Ho Park understands it, has the potential to transform that conventional list of design types and stylistic preferences by introducing combinations of building components that will be unique to the history, site, and existing typology of each building project.

Contemporary discussions of the future of architecture and the prospects for the city typically involve advocates who demand the city be left as it is or re-built as it once was, or, alternatively, arguments for demolishing an historic condition and replacing it with an entirely different design vision. Depending on the circumstances, plausible cases can be made for both.

But what Jin-Ho Park proposes is that we look at new architecture beyond the categorical imperatives of those two options, and outside the frame of reference of the old design labels. To make the city new is to make architecture that "grafts" together disparate design strategies to produce unprecedented structures. These surprising new buildings will combine a selective sensitivity to the old and a manipulative capacity for the new with a loyalty to neither.

Jin-Ho Park promises a new form of architecture and city making.

His case for graft warrants a serious hearing.

Eric Owen Moss  
Los Angeles  
April, 2012

# Graft in Architecture

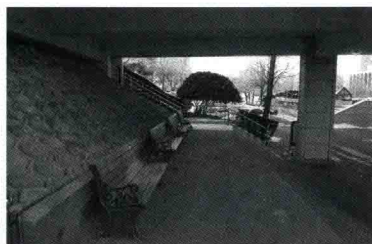
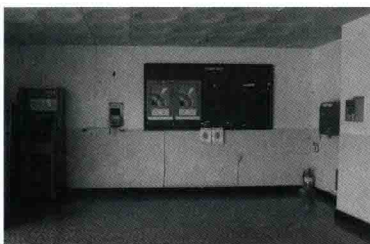
graft

1. [NOUN] [oft supp N] A graft is a piece of healthy skin or bone, or a healthy organ, which is attached to a damaged part of your body by a medical operation in order to replace it.

Architecture deals with the physical building as a whole. More specifically, graft in architecture refers to any designs added to unused or neglected structures and spaces found in an existing building. A tendency exists to ignore unused or trifling spaces in a building. At times, people are reluctant to pay attention to areas of no use. When fastidiously observed, such spaces can be found around a building. Rather than dismissing such spaces, graft in architecture values them for potential project sites. This situation is a wonderful example of turning a negative into an opportunity.

Accordingly, graft in architecture is not a blank slate. The idea joins an existing building and a foreign design to form a close union. Because the structure already exists, the addition becomes a project of expanding, adding, and grafting new structures where needed. Thus, graft in architecture improves parts of the disused or neglected structures and spaces considerably. In this book, the term needs to be more clearly defined in order to have a strategic place in architecture. Simply put, graft in architecture refers to the small and minor installations or additions in an existing building, whether built-in or stand-alone furniture, installations inside or outside a building, or building components. Based on the ideas of reusability, sustainability, and accessibility, the significance of such a notion is emerging as a new phenomenon in contemporary architecture.

The overarching goal of such additions is geared towards breathing new life into the existing building by using inventive ideas. In some cases, the experimental approach aims to fuse alien design languages with the existing building, and to address the delicate balance between the new addition and the old elements of the existing building. In other cases, design ideas under the principles extracted from the existing structure are used to accommodate the new addition and to continue the thread of the existing architecture. In such a case, the new design carries the principles of scale, material, construction, and geometry.





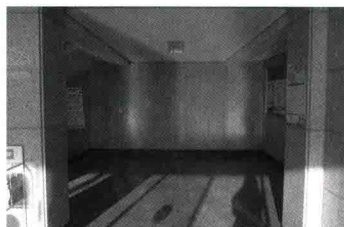
/// Grafting  
Photography by Kobako

The dialectic of the old and the new becomes a theme that enriches the architecture in a proactive way. Both old and new structures benefit in the grafting of a new design in the existing structure. Therefore, grafting achieves a more responsive architecture through the adaptability and mutative qualities of the existing architecture. Some may argue that the additive design should be subservient to the original structure. The argument may be true in terms of the size and the scale of the addition to the principal structure; however, graft in architecture ranges generally from small- to large-scale interventions. Some may argue over the design, which can differ from the existing building, and not be necessarily in harmony with the original structure in style. Construction techniques, materials, and details may also vary and the variation means either being conscious of the link or mutual dependence with one another.

Incorporating both ideas with the addition may have no relationship to the materials or spirit of the original building and vice versa. Additive designs may clearly indicate the difference. Such visual contrast may make for a purer sense of respect for the original building, as opposed to a sheer renovation. Maintaining the structure and surrounding areas in a perfect state throughout time needs resistant, lightweight, and controlled materials. The design should also be easy to transport, assemble, and dismantle, in order to give designers sufficient time for the installation or exchange of parts of the design whenever possible.

The notion of graft is more common in surgery and botany. In surgery, grafting means a surgical procedure to transplant materials, such as living tissue, an organ, or bone attached to a body part, as a replacement of a damaged part or to redress wrongs in the existing structure. The positive properties of two genetically different objects combine to form the new hybrid. In botany, grafting describes any of a number of techniques in which a section of a stem with leaf buds joins with the stock of a tree.

Graft in architecture represents an institutional form that attaches itself to the body of the host and begins to explore its potentials. The host allows the graft to localize itself by using the constructive resources of the host toward the development of the project design. After grafting the new design to the old building, both co-exist until another change occurs. The new design merges in the systems of the existing architecture without any major alteration to the building itself. The attachment to a host body is not meant to dissociate one from the other, but to build the interactive capacity to engage with constituent parts. Eventually, the host space benefits from the interaction. In the end, both old and new design benefit from an interaction to the point that they operate more successfully by giving up some of their unique characteristics.



Graft in architecture is not a parasitic relationship. A parasite is an organism that lives in a different organism while contributing nothing to the survival of its host. A parasite can be visible to users who utilize the exploits or extensions created by the introduction of the parasite into the host. Instead, the co-existence of graft in architecture is closer to a symbiotic relationship. Here, two designs align in order to increase their own relevance. They co-exist and learn from one another across time, to the point that they begin to intermingle in order to become the combined relevance of the collective. The new whole maintains an overall emergent coherence. Therefore, the coexistence of the old and the new is mutualism, rather than parasitism. The interaction between two different designs allows both structures to derive a fitness benefit.

The characteristics of graft in architecture should be creative, planned, or formal in the use of the existing structure, and not mere simple additions of whatever kind and wherever situated. Graft in architecture should be the result of highly specialized, focused, and integrated strategies in design composition and construction, derived from critical examination of the existing structure and surroundings.

The procedure of graft in architecture begins with highlighting the kind of parts or areas, at the point of its departure. All the potentials for space within a building can accommodate the changing needs and subsequent new requirements. However, the reality of any building tells a different story. Within an existing building exist underutilized areas. At times, rooms or areas remain vacant and unused, consciously and unconsciously, for many years. The abandoned areas are up for adoption. The exploration of the underutilized site for new additions scattered throughout any building is the motivation behind the approach of grafting.

In critically identifying and recognizing the most problematic zones, it may become apparent that some parts of buildings may have fallen into disrepair and suffer from a lack of interest. These derelicts have been unused for some time and have become eyesores. Therefore, planners must be careful not to hinder efforts aimed at sustainable space utilization. Graft in architecture adopts any zone, but focuses more on the renewal of public areas. The planners then examine the problems and drawbacks of the chosen zone for evaluation. Before conceptualizing any design alternative, architects must design strategies and conduct a thorough research of the target building. The approach enables architects to leverage existing assets and rethink the use of older and existing spaces, rather than continually seeking out new spaces. The careful transplanting of new designs into existing buildings enhances the whole atmosphere around the area into better space and the enhancement reinforces the behavior in the public realms and creates new types of human relations. In this sense, the constructive and creative act transforms part of the zone into new types of space.

At times, graft in architecture merely relates to remodeling and renovation. The idea has to do with the sustainable reuse of existing structures, considering the recycling of the structures, prior to simply condemning them as junk. Most of the older buildings are under consideration for conversion to either new uses or adaptive reuse. Often, great efforts are exerted to convert a building into new usage or renovation to appeal to the contemporary market. Examples of such cases are widespread, from urban scales to small buildings.

Remodeling or renovation can be as comprehensive as building entirely new designs or as simple as refurbishing and remounting new minor designs. Some parts of the buildings may become unstable and need rebuilding in situ or slight realignment. However, graft in architecture is more interested in space, rather than in the replacement of some particular building elements. This interest is in how a relatively minor addition in a building can result in major improvements of the given areas. Rather than removing or changing any part of the chosen building, graft in architecture considers adding and implanting interdependent design elements into the existing one.

At times, the value of the existing building lies in the sheer volume of materials and structural designs that are already on site and in place. The creative use of the existing building and the appropriate integration of the building form and materials into a new facility lead to a successfully recycled building. The installation of new design items to the existing buildings result in new uses. However, as this book indicates, graft in architecture is not intended to “glam up” remodeling and renovation, but instead, to properly delineate the sort of improvement in more architectonic

#### Sky Frame

James Carpenter /  
School of Architecture University  
of Hawaii at Manoa  
Honolulu, USA



terms. The term is not simply concerned with mere repairs or minor changes of the appearance and functional utility of a building part, systems, or structures that are simply poor, damaged, or dysfunctional within the context of the existing building. The idea is not simply an alteration in the appearance of an existing building or a replacement of parts of the building.

Graft in architecture explains local melioration as the act or process of improving structures and spaces in a state of disuse or neglect. The process is not simply a matter of altering or replacing rundown parts of a building, but that of adding new designs in the derelicts, unused spaces, or eyesores. In addition, the process affects the improvement of the spatial look and value of the existing building in order to achieve a truly sustainable building solution and to extend the life cycle of the existing part of the building. The new look reinforces the identity of the area and makes the area more easily identifiable and attractive, thereby providing a new life for the areas. Grafting new designs in a building for a new use is sustainability at its most fundamental level, and is a time-honored design experimentation that has burgeoned beyond the stereotypical spaces in any traditional building. Moreover, grafting preserves the original context of the chosen building and adds richness and vitality, which often results in innovative and unique spaces.

The notion offers many possibilities for design experimentation. Grafting appears in several different architectural forms so that there are various tactical operations with regard to the host and the new design. As mentioned, the criteria that define graft in architecture relate mainly to new additive designs affixed to an existing building. These criteria comprise six categories according to their respective characteristics: *global vs. local*, *internal vs. external*, *temporal vs. permanent*, *decorative vs. pragmatic*, *heterogeneous vs. homogeneous*, and finally, *mobile vs.*

3535 Hayden

Eric Owen Moss /  
Culver City, CA, USA



### Six graft categories

Global vs. Local

Internal vs. External

Temporal vs. Permanent

Decorative vs. Pragmatic

Heterogeneous vs. Homogeneous

Mobile vs. Stationary

**stationary.** The relationship of the six categories catalogs a means toward threading new designs to the parts of the existing structure. Accordingly, certain designs belonging to more than two categories are not surprising, despite the characteristics in each category being distinct. The additive design may be local, internal, temporal, decorative, and homogeneous. In another case, a design belonging to one of the above categories occurs because graft in architecture has a tendency to be in harmony with the other categories.

Graft in architecture occurs in the **local or global** levels of the additions to the existing building. The notion involves a variety of radically differing scales and scopes of the given project. When the graft operates at a local level, the additive design merges in the details of the building, such as a small installation locally hanging in a building structure with cables. Inserting a new small design in an existing building creates a positive impact in the areas by converting the banal and conventional space into something new and alive. The overall cladding design of a building is an example of global addition because this addition changes the image of the whole building.

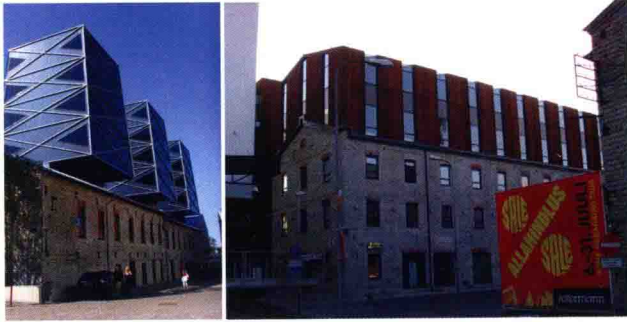
Graft can occur in the **internal or external** part of the existing structure. A new addition attached to the outside of the building intends to be highly visible and of special importance to the neighborhood. However, such external additions must have a limit. For example, a lightweight structure at times can hang on a wall or a new structure can be stacked on top of the roof. This approach may break an external order of the building, thereby providing an idiosyncratic character to the design. Most of these cases need to test and estimate the structural safety of the existing building as well. When applied to the internal part of the building, a new design integrates into the inner organization of the existing building at the small or large scale of installations within a building.

The additions involved can either be **temporary or permanent**. Temporary addition refers to ephemeral bonds to the existing structure. Such addition has minimum deployment time, low maintenance, and flexibility of use. Moreover, the materials are lightweight, durable, and easy to change and dismantle. The permanent or semi-permanent addition becomes an integral part of the existing building, and follows the life cycle of the building. The addition is a durable solution attached to the existing structure. In some ways, the design of the permanent addition must blend with the original structure with carefully harmonized designs and materials.

Fahle building

Raivo Kotov, Andrus Kõresaar /  
Tallin, Estonia





The Rotermann quarter

Ott Kadarik, Villem Tomiste,  
Mihkel Tüür /  
Tallin, Estonia

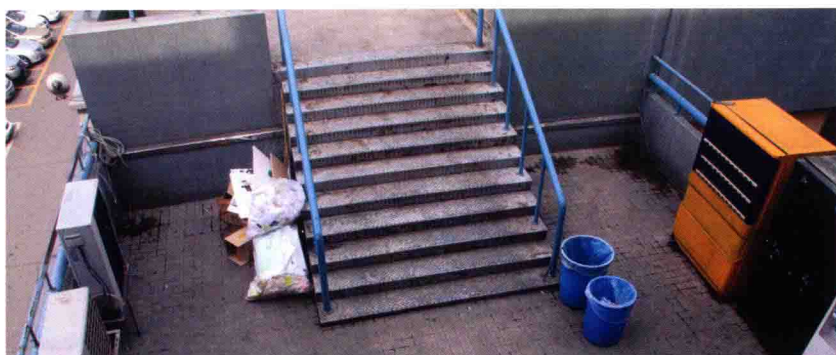
A new additive design can be for purely **decorative** and aesthetic purposes or for a specific function. At times, the role of the addition is double-sided. On the one side, decorative addition is **functional** when it has social usefulness in attracting users and providing an idiosyncratic atmosphere in the building. On the other side, functional addition serves as a key visual element in the area. Whether ornamental, functional, or a combination of both, the addition should create a unique focal point of once unused and abandoned space that offers an excellent opportunity to incorporate benefits for the building.

An addition can be either **homogenous or heterogeneous**. In the process of creating graft in architecture, a new addition may be similar to the existing features or be unique and distinct from the existing building. A homogenous addition includes a consistent and uniform design such that the new addition is harmonious with the old in scale, proportion, materials, color, and design of the building. These additions are inconspicuous as possible from the public. Rather than establishing a clear distinction between old and new, simply repeating and consolidating the existing design, in keeping with the character

of the structure, would be more appropriate. Thus, the homogenous addition seamlessly blends with the existing structures. The heterogeneous addition bears no relationship to the proportions, massing, and design of the existing building. The unique addition is entirely different from the existing one, such that the new addition is not fused with what is genuinely original in the existing structure. This approach is not concerned with the original state of the building. Avant-garde experiments and outside-the-box thinking challenge such an addition. These changes must be readily distinguishable from the older work in appearance.

**Mobility issues** are a key part of graft in architecture. The newly added design can be movable, stationary, and perhaps, self-supportive, floating, or positioned on the structure. The design could have an interactive motion with electro-mechanical systems or simply latched together with the existing structure. The interactive design explores new design possibilities in using innovative and alternative technologies. Such technological advances are synthesized in grafts in architecture, such that they establish a new sense of place for the chosen area. A movable structure between deployed, collapsed, and stowed positions belongs to this category. The design can be self-standing, portable, transportable, or securable to storage, while maximizing the chosen space.

Under the umbrella of the graft notion, the present book presents four parallel, yet different, projects. These projects investigate different territories through a variety of scales, materials, techniques, and approaches. The current study also documents and describes the entire process, beginning with the inception, design, and execution of each project. The designs are not only experimental at the level of conceptual design, but also practical for the nuts-and-bolts fabrication.



An increasingly wider range of projects is possible with the notion of graft in architecture. After careful observation and analysis of the installation praxis, the present study has chosen four different themes at four different locations over five years within an existing building. The selected building is located in the campus of Inha University, Korea. Specifically, the chosen area is part of the Engineering complex where the Department of Architecture is located. The four areas are along the corridor, under the ceiling, on the bridge, and in the lounge of the building. Each selected site is carefully scrutinized and thoroughly researched before conceptualizing all reasonable development. Over the years, the sites and the surrounding areas have deteriorated. Therefore, the poor facility conditions and limited utilities needed rehabilitation. The conditions of the chosen sites will worsen if no effective action is made to improve the sites.

This book includes four parallel architectural works, all of which fall under a series of design experiments performed between 2007 and 2011. A series of events, such as lectures, seminars, and public presentations have led to the development of the works. In relation to the cross-disciplinary agenda, talks from different disciplines were conducted during the project. These works evolved from conceptual designs. The experiments followed the method of the construction, fabrication, and assembly of a full-scale installation. Each project, which dealt with different problems in various sites, underwent strategic planning and development under a common theme.