

CHRISTOPHER ALEXANDER'S ARCHITECTURAL INSIGHTS AND LIMITATIONS

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Abstract. The architect, theorist, and computer science pioneer Christopher Alexander has had an immense impact on design theory, more so in Computer Science than in Architecture. Following his death in March 2022, some of Alexander's old collaborators exchanged reminiscences about working with him. This dialogue seeks answers to the question of Alexander's legacy, and why his influence directly on design was not as extensive as it was in other, unrelated fields. Digging deep into the methodology of design patterns, and Alexander's underlying investigative approach, reveals clues for revising world architecture towards a more humane adaptation. The conversation also uncovers errors that hindered the adoption of these important ideas, and which have to be avoided by architects and designers in all future implementations.

Keywords: *architecture, Christopher Alexander, complexity, design patterns, planning, urbanism.*

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1. Introduction

Christopher Alexander (1936-2022) was an iconoclastic architect, computer science visionary, design theorist, educator, oriental carpet authority, and urbanist. He influenced a number of architects to design beautiful buildings in no specific style, incorporating what he termed "living structure". Alexander was much more influential in computer science, where software engineers picked up his concept of design patterns and applied it to object-oriented programming and Wikis (Gabriel, 1996; Cunningham & Mehaffy, 2013). For decades, those who know his work have been puzzled by the failure of the world of building, construction, and design to adopt his techniques for generating beautiful buildings and cities. People question why this revolutionary change — towards restructuring the built environment into a place of incredibly nutritious beauty — never took place.

Alexander authored several books, among them *The Timeless Way of Building* (Alexander, 1979), *A Pattern Language* (of which S.A. is co-author) (Alexander *et al.*, 1977), and the monumental *The Nature of Order* in 4 volumes (of which N.A.S. is the main editor) (Alexander, 2001-2005). These writings exerted considerable influence on self-builders, but have so far penetrated neither into the mainstream profession nor architectural academia. Their approach to design is so different from what is taught and

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practiced ever since Industrial Modernism became the dominant building and design paradigm, that people find it easier simply to ignore Alexander. Another factor contributing to his neglect is that his own buildings, while providing a wonderful experience to be there in person, do not photograph well. Apparently, he never took the trouble to design with this dual purpose in mind: to invoke the user's deepest feelings of belonging, while also looking good in a photo.

The authors of the present essay, having collaborated directly with Alexander at different times, attempt to summarize the possible reasons for why the expected architectural revolution never took place. This essay is presented in the form of a dialogue between Shlomo (Solly) Angel and Nikos Salingaros. It was provoked, in part, by an article by N.A.S. entitled "Why Christopher Alexander Failed to Humanize Architecture" (Salingaros, 2021). S.A. wrote a set of responses that tried to answer this fundamental question. This exchange of opinions is extremely important for a historical record of the pattern language method in design.

2. Image triumphs over the actual experience

SA: You say that Alexander's buildings do not photograph well. I refer to the real concern that buildings do not photograph well as 'the triumph of the two dimensional'. We communicate visual information largely in two dimensions — in journals, photographs, television, and videos. That is how marketing is done too, and the people who understand marketing design buildings that 'photograph well' no matter their utility or the feelings engendered by occupying their spaces. The *space* that people occupy, whether inside or outside, is difficult if not impossible to photograph, whether with still photography or videos. You have to be there and actually experience the space and use it to 'get it'. And that is where true architectural magic happens.

To the extent that Alexander's architecture is an architecture of place, to the same extent it is difficult to photograph and hence to market. Also, not surprisingly, architectural journals look for 'new' forms and new 'visuals'. And, as you say, when you do try to photograph Alexander's designs, they don't photograph well, or they look archaic and hence anachronistic because they exhibit old architectural forms, failing to excite journal readers with something 'new'. Buckminster Fuller's geodesic domes made him one of the leading architects of the Twentieth Century in large part because the domes photographed well, even though they have limited use, are hard to organize into useful places inside, and need to stand alone outside, making them rather odd structures. Still, they photograph well.

NS: There are separate requirements for designing a building that looks good on a photo: it has to be an attractive *object* that works coherently on the scale of the photo itself, not on the full scale of the building. This is perfect for the "building as object", initiated as a concept by the Bauhaus and raised to an end-goal ever since. A model looks cute and attractive; never mind the anxiety it will induce when experienced on the full scale, something never evident from the scale of a photo. It is nearly impossible to convey the emotional, visceral experience of a space, surface, or volume in a photo. This is a problem with all of architecture, not only with Christopher's.

But Christopher has the additional problem because his buildings rightly have fractal qualities: being subdivided into useful interior parts, and not being monolithic. During the modernist century, the profession became obsessed with compact shapes that, even if wildly and unnecessarily curved, do hold together. Michael Mehaffy and I

termed this cult obsession “geometrical fundamentalism” (Mehaffy & Salinger, 2016). Yet design patterns reveal that buildings with subdivided spaces are much more adaptive and fitting to human activities. If you privilege a form that looks “neat” on a photo, then you compromise its adaptation for use. Things get even worse with Christopher, in that he leaves some corners sticking out, includes unusual geometrical transitions that ruin the formality of a design, and exposes raw concrete exterior surfaces that remind one of Le Corbusier. I’ve been told they really feel nice when you are there, but on a photo they simply look odd. The problem is that architecture is judged almost exclusively by how it appears in a magazine, and here Christopher loses points.

3. Alexander ignored architects

SA: Alexander was not able to influence the practice of architecture because he did not ‘recognize’ architects. He never acknowledged that architects have a role in creating the built environment. He wanted to talk directly to ‘users.’ He reminisced about ‘master builders.’ But he never agreed or claimed that architects have a set of skills that could be made use of if they were properly educated. He rejected the whole profession, ‘throwing the baby out with the bathwater,’ so to speak.

In short, his relation to the profession of architecture was problematic to begin with. He did not address architects. He was not interested in being a part of the architectural discourse of the time. In fact, when we were working on *A Pattern Language*, he basically forbade us to read anything written by architects or architectural critics. Robert Venturi wrote *Complexity and Contradiction in Architecture* in 1966. I never knew about it. We never knew of Reyner Banham, either. The entire *A Pattern Language* does not refer to any architect or architectural historian. It is oblivious to it all.

Christopher saw himself, I believe, as a leader of a cult, rather than as a member of a profession. He despised the profession and everything that had to do with it. The way I see it, if you want to understand why he failed to humanize the profession, you have to start by examining his relationship with the profession.

NAS: I really cannot blame Christopher for getting so upset at the architecture-industrial complex that he tried to dismiss it altogether. He was inside it at the beginning, when he was seen as the new wonder boy of architecture. The establishment mistook his development of design methods using computers — probably for the first time — as something it could commandeer to further consolidate its hegemony. Christopher was there in the middle of it all during architecture’s inhuman years, and it got even worse. You can find him in photos of important architecture conferences. He told me how Louis Kahn really liked him, and whenever Kahn saw him, he would take him to the side and sit down and chat. Christopher said that he liked the old man and could never contradict him, despite not finding anything valuable in what Kahn said.

Eventually, the architectural establishment realized that Christopher was a dangerous revolutionary who was determined to blow up its comfortable totalitarian hold. The system reacted for self-preservation, and from that point on Christopher became an undesirable outsider. As Peter Eisenman said: “Chris unfortunately fell off the radar screen”. We are talking about modernism, totally silly Post-Modernism, and the first stirrings of deconstructivism. To Christopher, who was devoting his life to generating “living structure”, this was worse than madness: it was a willful drive

towards architectural nihilism (Alexander & Eisenman, 2004). He saw that the cloud of pseudo-theoretical confusion was merely a cover-up for assassinating architectural beauty. I happen to agree with him, and partially justify his self-isolation. His natural reaction was to have nothing to do with what was practiced as architecture at that time.

He should have reached out to modest practitioners who were honestly trying to build a comfortable house or not-so-bad office building. But isn't that what he tried to do with the patterns? I accept that Christopher did not work from within the practice of architecture to fit patterns into the everyday design process; this would have helped enormously. Yet the profession was driven from the top, and by collusive professional organizations, into inhumanity. Christopher was unforgiving.

I never worked for him on projects but helped strictly with editing *The Nature of Order*, and so cannot comment on the cult atmosphere among his group of collaborators. Both the Bauhaus and Taliesin were cults that succeeded in taking over world design (Salingaros, 2019b; 2019c). Christopher never managed to position his ideas within a larger movement that could compete with whatever architectural and urban practices he disapproved of. I often tried to talk strategy for doing this with him, but he would lose interest. He preferred to concentrate on how to create beauty. You noted that Christopher addressed the users directly, and this strategy only had limited success. Individuals adopted patterns for self-build projects, while the profession ignored them. Despite the common myth, revolutions never occur because the common people are unhappy: a group that knows how to organize needs to foment and direct the revolution.

4. Is the housing market centrally controlled?

SA: I think that your depiction of the architecture-industrial complex is a bit too general and therefore rather misleading. Indeed, the industrialization of housing production has failed again and again, largely because houses are such highly differentiated goods. In 2022, for example, there were 435,000 home building businesses in the U.S. alone, compared to 14 automotive companies that produced the great majority of cars worldwide. In the housing sector, therefore, there is no architecture-industrial complex. In fact, at least in the U.S., contemporary architecture has failed miserably in penetrating the housing market. Most of the single-family homes produced in the U.S. today are far from both modern architecture and industrialized housing. They have some very simple pattern languages that they follow, which Alexander and Chermayeff originally tried to describe in *Community and Privacy* (Chermayeff & Alexander, 1963). But I would not go so far as to label all of this housing stock as inhuman. This, I believe, is going a bit too far.

NAS: While you are right in part, I don't agree with you. The housing market uses a small set of terribly deficient and simplistic design patterns to churn out vast stretches of ugly sprawl. But the real mistake is that the larger-scale design patterns that Christopher emphasized as necessary for living urban fabric are absent. There is no urbanism there, only deficient and terribly isolated houses. And they are cheaply built: one could conclude that this is intentional so they turn into junk in 20 years, even though for the same cost, one could build longer-lasting structures. I believe that this construction and developer model is made possible after eliminating Christopher from architectural and urban discourse. It opened up a free-for-all of shoddy quality for both construction and design. The architecture-industrial complex in housing is not directed

by the schools, but by the inertia of profiting from the junk-food equivalent of houses. Even though they are independent, 435,000 home-building businesses in the U.S. are copying each other to churn out the same shoddy product.

But then in the rest of the world, and still in the US as far as public housing, Industrial Modernism rules absolutely. Despite all the massive failures, despite the alienation of residents and all the crime, there is a societal class of decision-makers who are still beholden to the industrial housing model of Magnitogorsk and Die Weissenhofsiedlung. This is a politico-religious dogma that is not to be questioned. Christopher's work instantly reveals its inhuman aspects, but nobody will ever admit that. Ageing Marxists had the belief drilled into them that people need to live in inhuman concrete boxes, to achieve "social justice" through social engineering, embedding this typology into the national conscience of all countries.

I also see contemporary architecture penetrating the high-end housing market, in a limited yet toxic manner. New high-ticket fashionable houses reach as far out into inhuman design as possible, as their brainwashed patrons crave to be seen as having contemporary tastes. Thus in both historic European and US cities, you find dreadful concrete-and-glass bunkers inserted among historic façades.

5. Suburban sprawl anchors the American Dream

SA: During the twentieth century and especially after the second world war, people became better off. They could afford better housing and they could afford to own a house. The Los Angeles suburbs housing the rich were never called 'sprawl'. The term 'sprawl' and the disdain for the suburbs was popularized only when the middle class and the lower middle class could own small homes, built at relatively high density, mind you, in the budding suburbs. Sprawl, if it means owning your own house — the so-called 'American Dream' — should not be belittled, as it typically was empowering and welcome by people who for the first time could own a home.

Again, the outcry of planners and architects — including the pattern language adherents and the New Urbanists — falls on deaf ears if it essentially means that people should move from their single-family homes to apartments in a more urban setting that looks more like Paris. Yes, the New Urbanist calls to level the playing field that now favors single-family homes and remove the regulatory, fiscal, and financial barriers to mixed use and multi-family housing are correct moves. Yes, maybe you can convince some people that living in a small apartment in Barcelona is preferable to living in a large house in suburban Atlanta, but I would not go so far as blaming the 'architecture-industrial complex' for the invention of the suburb or for the proliferation of sprawl, assuming that the people who live there are too stupid and too brainwashed to know better.

Telling people that "they remain blissfully unaware of being manipulated" simply turns them against you. This, in my mind, is an insulting paternalistic approach to buildings and cities that instead of empowering people to build and live in their own homes as they see fit, forces them to live in homes that some all-knowing higher authority builds for them. The twentieth century, while definitely enhancing capital accumulation, also saw the proliferation of capital that gave people enough money, for the first time, to have a house of their own. Adherents of the pattern language should recognize and respect this.

NS: We need not venture out into the imminent global threats of habitat destruction and energy emergency to agree that sprawl is unsustainable. You as a world-known urbanist agree that millions of isolated houses that are not part of an urban network guzzle up energy unnecessarily. The problem of sprawl is its lack of urban structure, which is obvious because all the city-scale patterns are absent. And intentionally so. I do blame the architecture-industrial complex for colluding with the car and oil companies to build urban fabric that is maximally consuming (Salingaros, 2020).

New Urbanists suggest reconfiguring roads and lots to generate mixed-use urban fabric, where that is indeed possible without massive expenditure. Many places are so badly planned, however, that they are better abandoned altogether and used for scrap materials (James Howard Kunstler's pessimistic scenario). Nobody is forcing people to move from their suburban house into a centrally-located condominium.

The "insulting paternalistic approach to buildings and cities that instead of empowering people to build and live in their own homes as they see fit, forces them to live in homes that some all-knowing higher authority builds for them" has been operational ever since Bauhaus modernism made its utopian promises. It's the strategy of the "dark side", not ours. We are trying to liberate people from this top-down mind-numbing conformity by offering them the freedom of design patterns and mixed-use urbanism. This small-scale capitalist solution is embedded in a free-market system, and opposes both extractive global imperialism and statism.

6. The architecture-industrial complex and the pattern 'Four-Story Limit'

SA: I think that the term you use, 'the architecture-industrial complex', is confusing. President Eisenhower's original term, 'the military-industrial complex', was aimed at drawing attention to the political coalition between military leaders who want to increase military budgets for military hardware and the industry that produces this hardware and wants to increase its sales. This, he thought, would lead to ever increasing military expenditures and an ever more powerful reliance on military responses to conflicts. That made total sense. Now, what exactly is 'the architecture-industrial complex'? The architecture profession is not organized to exert power or to form political coalitions. Architecture offices compete for jobs and architects teach in architecture schools. Their connection to 'industry', by which you could mean the building industry, the building materials industry, or the real-estate 'industry' are mostly passive; they rely on industry to get jobs. The decisions of what to build and how to build largely remain the province of the industry and architects are often reduced, as you point out, to marketing the building products conceived by developers or by the state by making them look attractive. In short, the concept of 'the architecture-industrial complex' assumes that architects have a lot more power in shaping buildings in particular and urban form in general. Both buildings and urban form are largely the result of market forces and nowhere in your analysis do I see a reference to market forces.

Take for example the pattern called "Four-Story Limit" (Pattern 21). This pattern, although I confess to have participated actively in drafting it, completely rejects high-rise housing, skyscrapers, and even the seven-story structures in Paris. Is adhering to his pattern serious? The height of buildings or, more generally, floor area ratios (FARs), is determined by the value of land: In central business districts where land values are

highest, buildings are high too. Admittedly, this has little to do with *The Timeless Way of Building* because the technology for building tall buildings did not exist in the not too distant past. But Alexander does not accept that, does he? Is this a litmus test? How are architecture students — or the profession as a whole, for that matter — supposed to react to this pattern? Most likely by being alienated from the pattern language altogether rather than refusing to build taller buildings that are demanded by the market.

NAS: The “architecture-industrial complex” is a term coined by my friends, especially David Brussat, to describe the vast power that the profession exerts though the system’s inertia. Being deeply anchored to local and national politics permit it to build on speculation, facilitated by a host of favorable regulations. The architecture profession automatically organizes to block threats to its working typologies such as glass-and-steel skyscrapers and cheaply-built cookie-cutter suburban sprawl houses. It backs up the media campaigns promoting ridiculous starchitect projects, even though individual architects may despise them; yet the system fiercely protects its stars. This collective action occurs spontaneously, even as individual firms compete with each other for jobs. There is no true market competition: market forces are manipulated by offering the same deficient product changing only a thin veneer. Just try to build a truly individual building: the standardized system is stacked against you so that the costs skyrocket.

Three years ago several groups independently of me — as I found out later — sent in similar recommendations for changing the accreditation requirements for the architecture education curriculum (Salingaros, 2019a). All were rejected in favor of keeping the standard Bauhaus ideas in place. This response is characteristic of a monolithic system that resists any change despite pressure coming from scientific evidence. Those outside the ossified system are ignored even if they play by the rules so trying to fix things is futile — you only get slapped in the face. Maybe Christopher discovered this, which could have been a source for his anger.

The “Four-Story Limit” pattern turns out to be just as true today than it was when you and Christopher wrote it. Contradicting all the tens of thousands of tall buildings raised since then, the latest medical data show how children’s development is seriously stunted if they grow up too far from the ground (Boys-Smith, 2018). Your initial intuition was correct. If you violate the pattern by going up to 7 or 8 stories, the result is definitely worse, but it’s nothing compared to the disaster of going up to 20 or 80 stories. The architecture-industrial complex has made tons of profits building high-rises, spurred by the business, finance, and government sectors, thus committing a great crime against humanity. In 1977, when *A Pattern Language* was published, the scientific evidence was tiny compared to what is known today. Yet nobody is talking about changing the skyscraper model of profit-making.

7. New pattern: an arterial grid of dirt roads

SA: And here is where I depart from Alexander’s dualistic approach to cities. At the base of his approach is a utopian dream of a city that does not exist anywhere, where, for example, buildings are limited to four stories and as a result people lead healthy and full lives. Cities as they are today are rejected — I would go as far as to say ‘hated’ — because they do not conform to the right way of thinking about them. You will agree with me that for Alexander’s utopian dreams to become a reality any time soon, everything must be torn down — be it the glass-clad skyscraper downtown or the

dreary single-family home in the suburbs — and replaced with something better. This, come to think of it, is going even beyond Le Corbusier's *Ville Radieuse*. I, for one, love cities, and I love them just the way they are, their ugliness and unwholesomeness included.

My use of the pattern language today has been limited to introducing one set of patterns — an arterial grid of dirt roads (Angel, 2008) — as a simple way of teaching municipalities in rapidly growing cities in the Global South about preparing for their anticipated outward expansion. The pattern essentially calls for laying out a grid of wide roads, say 25-30 meters wide, that are one-kilometer apart, and that can carry public transport and trunk infrastructure. The idea is to lay out the grid and obtain the rights-of-way for the entire grid now, before development gets there and makes it impossible. This has now been successfully carried out in several cities in Ethiopia. In Colombia, the rights-of-way of future arterial roads have been marked by planting local trees along their future sidewalks.

As a pattern, or a small set of patterns, this idea was easily grasped by local officials and other stakeholders on the urban periphery and it was and is being realized in multiple ways while still conforming to the basic pattern. A grid of arterial roads allows municipalities to organize the urban periphery on a large scale, to increase land supply so as to keep housing affordable, and to connect the periphery to the urban job market. And it is a pattern that does not require the system to change from System B to System A or for the city to be reinvented from scratch. It can be part of the city of today and the city of tomorrow, and the use of the right-of-way can remain adaptive, much in the same way that Bahnhofstrasse in Zurich now only carries pedestrians and trams, or the way arterial roads in Bogotá and Curitiba now carry bus rapid transit.

This pattern is my own variation on one of Alexander's abandoned ideas, introduced in an article titled "The Pattern of Streets" (Alexander, 1966) where he proposed having long, wide, unpassable, parallel freeways cutting through cities, something really beyond the pale, going beyond Brasília and Le Corbusier and lacking any Quality Without A Name whatsoever. Nothing ever came of this pattern. Alexander wisely turned his back to it and it never made it into *A Pattern Language*, but it did get me thinking, though, and for that I am grateful.

NS: You put your finger on a crucial point: that it is unrealistic to expect a massive restructuring of cities in order to apply Christopher's insights, even though the result would be far better for the inhabitants. And Christopher did not do all the necessary work for us to be able to implement his ideas in the real world. He put his energy into what interested him most, and neglected those things that he didn't particularly enjoy doing such as suggesting how to negotiate practical issues with authorities, city planners, investors, politicians, and regulators.

8. Patterns are anachronistic in today's global monolithic system

SA: The reason that some of Alexander's patterns seem anachronistic is because they are. Most of the architecture that he approves of was created in an earlier stage of capitalism, where capital was in short supply and was not accumulated — either by the private or the public sector — at the levels of the twentieth and twenty-first century. The first reason that the houses in Delft — standing one near the other, all different yet all the same — are so beautiful is that they were created by single homeowners using small amounts of capital. The accumulation of capital made it possible to create 'large

projects’, where large amounts of capital were invested in a short period to create thoughtless and non-adaptive architecture, an observation we elaborated upon in *The Oregon Experiment* (Alexander *et al.*, 1975).

Modern capitalism and modern government demand large projects, brought about by rapid investment of funds, making mistakes that are difficult to correct because, as you point out, the buildings are non-adaptive. In short, much of what you object to as a product of the ‘architecture-industrial complex’ has little to do with the role of architecture and a lot to do with the advent of capital accumulation and the concentration of money and power in fewer power centers. In other words, the architects that are involved in large projects are nothing but servants of advanced capitalism. They did not create it. Their role is to facilitate and enable it to create facts on the ground under the conditions it dictates.

NAS: Here I agree with you entirely. Christopher’s patterns are anachronistic in this monolithic system but that does not mean that they are irrelevant: they still apply to create humane environments. The system exerts its power and prefers large non-adaptive projects — hence large mistakes. Whether architects follow or lead construction and finance makes little difference. But using different, adaptive design typologies could result in an infinitely more humane product for roughly the same investment. Here the blame falls squarely on the architects, architecture education, and the servile media. Together, they promote inhuman models for the built environment, and if they did realize this, they never object.

9. Is the basic rubric of the Pattern Language flawed?

SA: I believe that there is a fundamental flaw in the very construction of the pattern language in *A Pattern Language* and later in the new patterns, that mitigates against its wide acceptance as a, so-called, ‘package deal’. *A Pattern Language* has many patterns that have indeed been adopted on a massive scale in modern architecture. You cannot say, therefore, that “patterns cannot be implemented within the current design paradigm”. I can enumerate the patterns that are commonly used one by one, there are dozens, but let’s take just one example, ‘Six-Foot Balcony’ (Pattern 167). The text says: “Balconies and porches which are less than six feet deep are hardly ever used ... Whenever you build a balcony, a porch, a gallery, or a terrace always make it at least six feet deep. If possible, recess at least a part of it into the building so that it is not cantilevered out and separated from the building by a simple line, and enclose it partially.” This is a rather simple observation and a lot of people ‘get it’. It is no wonder, then, that a lot of porches and balconies that are designed for sitting outdoors, are six feet or more deep. But adopting this pattern, you will agree, is not enough to make a place truly beautiful in the sense of acquiring the Quality Without A Name.

And here lies the crux of the problem. Alexander was comfortable with listing more than 200 patterns without telling us anything about which ones are essential or whether we need to employ *all* of them — or all the relevant ones — in a given project to attain ‘beauty’. To wit, you can use a lot of patterns in a design and then decorate the place with ornaments in a shabby way — say the way Mar-a-Lago is decorated — and the place will look terrible. So here is the fundamental flaw in the pattern language: It does not provide you with a set of patterns that are adequate to create healthy and supportive environments. It has no hierarchy or a sense of priority. It implores you to

use patterns, probably as many as possible, but does not tell you whether the end product will create an acceptable place.

In fact, by adopting a Zen-like or Taoist-like position, as in “the Way that can be told is not the Way”, it hints at the possibility that even if you religiously employ all the patterns you can, you may end up missing the Quality altogether. It is always possible for pattern language adherents to point at what is missing from a place, but it is not possible to explain why places that do not have this or that pattern are still beautiful. In other words, the very core of the pattern language method, by creating lists, fails to direct people, say architects or designers, towards a more holistic design, while the Quality Without A Name (QWAN) assumes that a beautiful place embodies some kind of a holistic mystical quality.

NS: I happen to look for the “Six-Foot Balcony” pattern everywhere I go: where I live and around the world, and it is rarely implemented. I don’t see how you got your impression of universal adoption. Most new balconies are unusable, hence unused, because they are not deep enough; or they were designed in someone’s office without bothering to notice the conditions of sunlight in the site. This pattern is found in older buildings whose architects reached the same conclusion independently ages before *A Pattern Language* was published (and from which this pattern was extracted). I stick to my claim that the International Style is too focused on geometrical fundamentalism to allow for this pattern’s implementation.

Your comment on the “minimal set” of necessary patterns runs deeper, and has no easy answer. Christopher did not give us guidelines for choosing just those patterns that will “bring a place or structure to life”. It’s not helpful simply to insist that you include as many patterns as possible. But I see this not as a fundamental flaw in the pattern language, but rather as something that remains to be developed. You correctly identify the need for a new method to provide us with a “pattern selection algorithm” that chooses an adequate set to create healthy and supportive environments and gives, at the same time, a hierarchy and sense of priority for the patterns.

The same observation goes for the Zen-like atmosphere that some pattern enthusiasts work within. That’s not helpful to a practical design method that should appeal to the world at large, whereas mysticism turns most people off. I personally find that I can always identify several patterns in places that feel beautiful. While you are correct about the missing pieces of the method, Michael Mehaffy and I are working together with many other people on filling in the rest of the working process. It’s something that is sorely needed. Here we are helped by Christopher’s subsequent discoveries in *The Nature of Order*, plus our own more recent work on design methods based on biophilia and neuroscience.

10. The organic variety of houses in Delft versus the monotony of modernist high-rises

SA: The second reason that the houses in Delft look so beautiful is that their owners were restricted to local materials, local technology, and local building knowledge. That basically meant that they used the same pattern language. Again, that changed quite rapidly in the twentieth century with the globalization of building material distribution, the proliferation of modern building technologies, and the global dissemination of knowledge about design, building, and construction. It is true that this

motivated an ‘international style’ for the first time, because it enabled the construction of high-rise steel and concrete structures everywhere, whereas in an earlier period such structures could not be built. And it is true that high-rise buildings tend to look the same because they follow the latest fashions dictated by a global architectural elite of ‘tastemakers’ and ‘influencers’, and they have access to the latest available technologies.

But these high-rises look the way they look mostly because their developers or owners believe that fashion sells. The architects who produce them must just follow along and submit to their desires. More generally, just like the biblical story of the Tower of Babel, the local pattern languages were confused. There was no longer a single pattern language that was shared in a given locality, be it in Delft or on a Greek island. All locations now have access to all pattern languages, all building materials, and all building styles and this typically results in a mishmash of buildings with different characters rather than in a place with an inner organic order.

NS: Sorry, but here you confuse form language with pattern language. A form language is a choice of building typologies, construction methods, geometries, and materials and it varies from region to region. Traditional form languages are locally-adaptive and change enormously from place to place, whereas the International Style is mind-numbingly generic because it is reduced to a simplistic minimum. This has nothing to do with the pattern language, which applies to all buildings everywhere around the world. As I have shown in my analysis, using a deficient, simplistic form language does not allow the implementation of design patterns, simply because there is no mathematical freedom (Salingaros, 2014). Instead of availing themselves of the richness of available technologies and materials, today’s “official” buildings stick to the cult concrete and glass boxes that cannot possibly accommodate living patterns. It’s a deliberate choice, with the real-estate speculators only partly to blame.

11. New cities and the myth of social progress

SA: More generally, I do agree with you that architecture has moved away from humanism or from championing social progress altogether. In fact, Le Corbusier and his contemporaries were still interested in architecture as a force for social change. The later ‘starchitects’ don’t care about it at all. They see themselves as artists in the business of creating tourist attractions or monuments to power. They are in a minority, of course, but they do set the tone.

The worst ones are those ‘consortiums’ that propose new towns on the edges of African cities, like Kilamba, Angola, located some 20+ kilometers north of Luanda or Hope City outside Accra, Ghana. And there are many more of this type of ‘speculative urbanism’ in Africa today. Surely, it is quite easy to criticize the ‘jewels in the garbage heap’ that these starchitects produce, using the tools of the pattern language. They are not designed as human environments, after all, but as monuments to power. In this sense, they fall into the same category as other grandiose fascist and Nazi architecture designed to impress the volk and bend it into submission.

But it is quite another thing to lump all of the built environment of the past 100 years — since the formation of the Bauhaus — into one ‘basket of deplorables.’ This is unfair. There has to be some scale — from good, to bad, to worst — on which to evaluate architecture. It cannot simply be System A and System B. This is too simplistic. In other words, even accepting the tools of the pattern language, there is a lot

to like in the built environment that was created in the past 100 years: a room here, a courtyard there, a window here, a tree-lined path there; no?

NAS: I'm not sympathetic to the accepted narrative that the early modernists were concerned with housing poor people. I still see their actions as ruthless power games, especially in the antisemitic, Fascist Le Corbusier. Yes, they saw architecture as a force for social change, to crush the individual emotions and spirit and to create machines out of human beings. Maybe some of the secondary figures bought into the industrial-modernist propaganda and honestly believed they were doing good for humanity. But then, so did the murderous dictators of that time who were suppressing the individual for the greater glory of the state.

Still, you have a point that the current architects don't even bother to wear a mask of false moral concern. For them, it's all ruthless profit at the expense of humanity. Their buildings are characterized by an especially sadistic form of nihilism. And yet you cannot blame them directly, because it's the client who decides on what gets built: the architect is simply an eager and unsentimental mercenary.

Designs meant to express totalitarian power by violating Alexandrian patterns become worse in their effects as they scale up in size. As you point out, the most egregious and inhuman mistakes are complete new cities designed abstractly on the computer screen. The built result is a dystopia of epic proportions. It's not surprising that such monstrosities are built in the third world, where money decides everything through corrupt politics.

I will grant that here and there, something beautiful and good is created within the current paradigm. But the vast scale of inhuman structure overwhelms those tiny bits of living structure, leaving a hugely imbalanced situation. Christopher's thinking did tend towards a polarizing dichotomy of System A versus System B, not allowing the gradations of in-between partially successful design; but that was his character.

12. Recognizing the *Quality Without A Name*: the need for new patterns

SA: I think that there is a contradiction between telling people to identify places they love to be in, places that they experience themselves as whole, or places that 'work' for them and their crowd with telling people that there are two books of patterns that tell you what places have that Quality Without a Name (QWAN) [from *The Timeless Way of Building*] and what places do not. I myself know what places feel good to me and I have tried to teach that to others, to get them to look for places that they love, for features of the built environment that they are comfortable in, or places that they can see that others are comfortable in. I have tried to get people, including myself, to build their own pattern language. And I, for one, thought that this was why Alexander insisted on calling the book *A Pattern Language* and not *The Pattern Language*. I thought that it made sense at the time.

I have been articulating patterns ever since and, as I told you before, I am surprised at how few people are able to do that. But teaching that, as a skill, has never been a particular interest of either Alexander or any of his disciples. And it is not that complicated. It has to do with finding an abstract form that somehow represents a class of forms that share a property that is useful or beautiful or wholesome or has that QWAN. Still, as one who was present at the invention of most of the patterns in *A Pattern Language*, I can assure you that many of these patterns were present in a lot of buildings, both old and new. Anyway, this marrying of the objective and the subjective

in identifying patterns must rest, first and foremost, on providing the necessary skills to individuals to be able to look at the built and natural environment and see where they are made comfortable, both physically and emotionally. Alexander himself was conflicted about it. On one hand, he wanted others to find their comfort zone but on the other hand what he was looking for was confirmation that his intuition was right.

NAS: The problem that we face today is that people have been shell-shocked and terrorized so that they can no longer recognize a place they love to be in; and in which they feel more “whole”. Almost everybody suffers from cognitive dissonance induced by educational institutions and the media. Their message is that you have to feel comfortable in the most anxiety-inducing, depressing places, and so you force your body to inhabit such places that generate revulsion and tension. Human neurological response has been so screwed up that this finely-tuned instrument essential to evolutionary survival is now short-circuited. If people can no longer experience this visceral good feeling of belonging and connecting to the world, they will ignore any discussion of design patterns. They don’t see the point.

Now suppose you are addressing a group of people who appreciate the value of design patterns, then it’s true that Christopher neglected to describe how to write down new patterns. In some of my papers I give guidelines for extracting patterns missing from the existing compendia by documenting them first-hand (Salingaros, 2017). That requires hard work, as I found out when writing new patterns for Michael Mehaffy’s book (Mehaffy *et al.*, 2020). Michael, Yodan Rofè, and I are old collaborators of Christopher, so you are not correct in claiming that none of his students was interested in deriving new patterns. True, one would have expected more of them to work on novel patterns. People in computer science have derived several catalogues of new patterns appropriate to software and software development, but not to the architecture of buildings and cities.

You are right that patterns exist embedded in both new and old buildings. After people wake up to the potential of healing beauty coming from the geometrical properties of the environment, they will then crave this quality. And they will consequently spend the time and effort to learn how to apply design patterns and to derive new ones that are helpful; but not before. It’s a question of a topic in architectural education being market-driven: if people had wanted to derive new patterns, then they should have asked to be taught methods for doing this. But nobody did for decades. And nobody does today. Architects, clients, and students accept without resistance the inhuman aesthetic that drives the architecture-industrial complex and global construction.

13. Forces for urban destruction are always present

SA: In general it is no longer true that “historical districts are destroyed to extract short-term profit through new building development”. Le Corbusier failed to replace traditional buildings in Paris, which he labeled slums, with his *Ville Radieuse* in 1924. Urban renewal in the U.S., championed as ‘slum clearance’ by people like Robert Moses, was stopped in the 1960s by influential writers like Jane Jacobs and Herbert Ganz who pointed out that the neighborhoods slated for destruction were living neighborhoods and not slums.

The conservation of historical districts has gained both respect and momentum in architectural circles, both in the Global North and in the Global South (the conservation

of the historical center of Quito, Ecuador, is a good example). As far as I can see, only in China do you still see massive destruction of entire neighborhoods of traditional homes to make way for modernist monstrosities. The reason not many traditional homes are left in Tokyo or in Dresden is that they were destroyed by bombing during the Second World War. In general, governments now see great value in the income generated from tourism in traditional neighborhoods than the value of replacing them with modernist architecture.

NS: I have to forcefully though respectfully disagree. Le Corbusier was only partially thwarted in his nihilistic schemes for Paris: his destructive vision of menacing blocks or skyscrapers sitting in windswept concrete plazas succeeded in demolishing the historic fabric of many other cities. The terrible part of the story about Jane Jacobs saving New York's Washington Square is that it was a fluke; in so many similar cases the bad guys win and destroy a vibrant historic district. You yourself live in New York City, now threatened with gutting its entire midtown in a frenzy of speculative building (Massengale, 2022; Brandes Graz, 2022).

Léon Krier documented how most of the destruction of historic urban fabric in Germany occurred post-war, in a concerted effort by the local councils to "modernize" their city and perhaps line their pockets with kickbacks. Look at Brazil and the decades-long reign of Modernism. Lúcio Costa, the architect/planner of Brasília, is also responsible for condemning a large number of eclectic historic buildings in Brazilian cities; the reason is that they clashed with his beloved International Style. Ever since, Brazil's building frenzy is tied to corruption on an inconceivable scale (Wikipedia).

14. Conclusion

Now that Christopher Alexander is gone, people are going over and re-evaluating his life's work. Some interested readers are discovering the depth and utility of his contributions for the first time; others realize that his ideas have outlived all the various design fashions that had marginalized them during decades. Recent advances in understanding design in terms of biophilia and neuroscience point us back to the correctness of Alexander's original insights. Now is an opportunity to give Alexander's methodology its proper due, and to apply it universally to build a better world.

Those who worked with Alexander are asking themselves why certain expectations never materialized. We (the two co-authors) have been doing that for years. This essay attempted to summarize our concerns, and hopefully to formulate some answers. Whose fault was this? Did something that Alexander do, or failed to do, handicap the spread of his ideas? Or was this due to historical circumstances that prevented the world from adopting his proposed design methodology? It's important to investigate those questions so that the next generation might be better able to implement the original program.

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