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物质遗留： 美国伊萨卡瀑布与伊萨卡枪械棕地考古学设计应用

Material Remnants:
Design Archaeology on Ithaca Falls and the Ithaca Gun
Brownfield Site

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去工业化场地中包含先前用途而产生的残存的物质遗留，它们以反映着不同时间的叠加的层次的形式存在。历史上的生命周期过程，包括开采、生产、消耗和弃置活动，都在土地上留下了可见的、有毒及无毒的物质痕迹。考古学提供了利用这些物质来解码相关的人类活动的方法。旧的工业建构可以说是我们在21世纪制造的废墟，也是去工业化最明显的物质遗留。对这类场地来说，传统的设计手法已经过时了。我们常常用处理18世纪的废墟的手法来对待它们，将它们浪漫化为乡愁的对象；又或者，我们将这些曾经富有活力的场地转化为19世纪时期式的用作被动休闲的公共公园。这些针对去工业化棕地的设计手法欠缺深度，因为它们只关注遗留下来的事物，将景观转变为不再运作的、被动休闲的表面。这些景观原本富含过去的历史活动及景观变化，而



摘要 / 景观保存着一层一层嵌在地表和地下的历史物质遗留。从表象上来说，空间反映的是一种压缩的时间；现在只是过去与未来之间的一瞬。考古学揭示了历史活动中的物质遗迹，场地的历史以不同的时间层次得以体现。棕地保留了在土壤和水中以污染物形式存在的物质遗迹，成为了解过去活动的线索。在那些工业活动曾经发生的棕地上，其所遗留的大型建构（比如物质废墟），展示着其工业化的过去和去工业化的未来。这种类型的场地具有重塑景观设计师角色的潜力，使其既成为能够揭露过去的考古学家，又成为能够重新构想场地未来的设计师。本文探索了未来在去工业化的场地上，物质遗迹和遗留对景观设计的影响。在此以位于纽约州五指湖区域的兼具文化与历史重要性的伊萨卡瀑布和伊萨卡枪械工厂旧址为例，来研究拥有物质遗留的、历史层次的复杂景观。

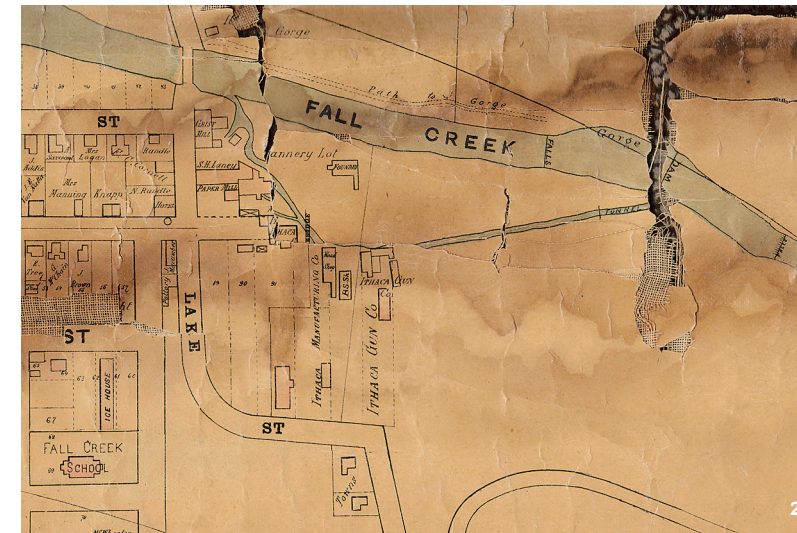
关键词 / 物质；遗迹；棕地；景观考古学；工业废墟；伊萨卡

Abstract / Landscapes carry layered material remnants of history embedded in the surface and underground. Phenomenologically, spaces contain a compression of time; the present is the moment between past and future. Archaeology uncovers material traces from past activities, revealing a site's history as layers of time. Brownfields bear material traces in the form of contaminants in the soil and / or water, and become clues for understanding past activities. Brownfields where industrial activities once occurred leave larger structures as material ruins, revealing an industrial past and a deindustrializing future. These types of sites have the potential to recast landscape architects as both archaeologists uncovering the past, and designers reimagining a new future for a site's legacy. This article explores the impact of trace and remnant physical materials on the future terrain of landscape architecture operating within deindustrializing sites. Ithaca Falls and former Ithaca Gun Factory, a culturally and historically significant landscape in the Finger Lakes region of New York State, is used as a case study for approaching a historically layered, complex landscape with material remnants.

Key words / Material; Traces; Brownfields; Landscape Archaeology; Industrial Ruin; Ithaca

Deindustrializing sites contain material remnants leftover from previous uses, layered as moments in time. Historical lifecycle processes including extraction, production, consumption, and disposal have left physical traces of these activities in the ground in the form of toxic and non-toxic materials. Archaeological approaches offer ways to use these material remnants to decode the anthropogenic practices that left them. As the most visible material remains on deindustrializing sites, old industrial structures are our 21st century ruins. Conventional design approaches to these sites are antiquated. Often, we treat them just as we treated ruins in the 18th century, by romanticizing them as nostalgic objects. Otherwise, we convert these once active sites into late 19th century passive public parks. Such approaches to deindustrialized brownfield sites lack depth because they focus on leftover objects and translate the landscape into a non-operative, passive surface. These landscapes are rich with histories of activity and landscape change, and their potential futures should be reimagined in this light. The field of archaeology offers the metaphor of the palimpsest, the idea of an active history perpetually erased and rewritten on the surface of the landscape. Landscape architecture must work with that momentum, rather than preserving frozen objects from a previous century. We must develop strategies of design archaeology that actively engage with the site's past and future productivity by developing a process-based approach that builds on the site's legacy of activity. One site that would benefit from this approach is the former Ithaca Gun Factory and the Ithaca Falls area, which serves as a case study for this article.

Material remnants in deindustrializing landscapes offer windows into the past and future, as artifacts from processes of extraction, production, function, exchange, consumption, transformation, and disposal. These artifacts "have histories just as we do. They have lifecycles."^[1] Toxic and non-toxic elements embedded in the surface and underground are manifestations of past industrial activities. Archaeology is the ideal tool for revealing these historical layers, as it is "quite simply the study of the past through



1. 伊萨卡枪械工厂拆除前的航拍照片，摄于2008年5月5日。这张图片由西向东拍摄，照片右下角为枪械山公寓，左上角为伊萨卡瀑布。© Simon Wheeler / Ithaca Journal Staff
2. 1889年伊萨卡康奈尔校园地图（由弗雷德里克·W·比尔斯绘制）。该局部地图描绘了伊萨卡枪械场地与伊萨卡瀑布的关系，突出了为附近工业提供水电的地下隧道，这些遗留设施仍保存至今。如今残破泛黄的地图的也见证了保护与衰退间的更迭。© Tompkins County NYGenWeb Project, USGenWeb Project

material remains".^[1] Considering the lifecycles of material remnants gives us clues to understanding cultural history. As these processes play out over and over again, they write and rewrite their histories onto the landscape. Osbert Guy Stanhope Crawford, a highly influential early twentieth century landscape archaeologist, once wrote that the landscape is akin to

"a palimpsest, a document that has been written on and erased over and over again... The features concerned are... products of human labor; these are the letters and words inscribed on the land. But it is not easy to read them because... the land has been subjected to continual change throughout the ages."^[2]

Considering these perpetual cycles of erasure and

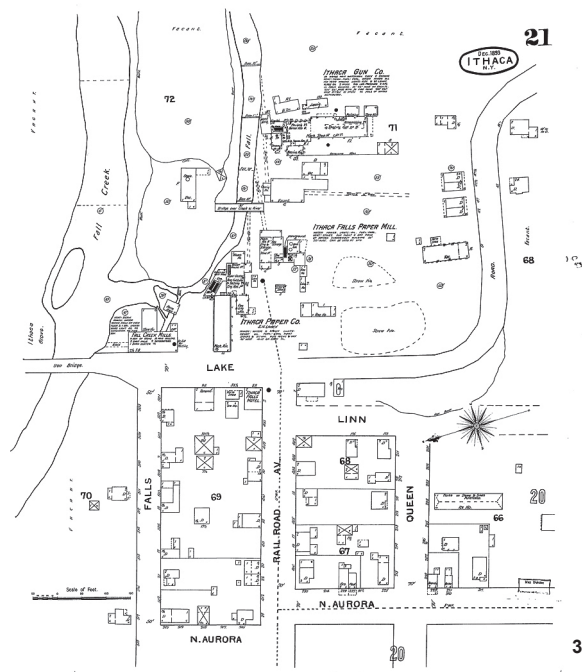
它们未来的潜力应以此为考虑来重新构想。考古学领域提供了类似重写本的方法，这是一种活态的历史，可以在景观表面不断抹去并重写。景观设计必须依循于此，而不是将几个世纪前的产物冰封起来。我们在发展景观考古学的策略上，应积极利用场地的历史及其未来生产力，发展一种建立在场地活动遗迹上基于过程的途径。本文所研究的案例——伊萨卡枪械工厂旧址及伊萨卡瀑布区域便是可以从前述方法获益的其中一例。

人们在开采、生产、使用、交换、消耗、转化和弃置过程中留下了人工痕迹，而去工业化景观中的物质遗留开启了联通过去和未来的窗口。这些人工痕迹“就像我们（人类）一样具有历史。它们具有生命周期”。^[1]镶嵌在地表和地地下有毒的及无毒的物质，是过去工业活动的体现。考古学“简单来说是透过物质遗留研究过去”^[1]，是揭示这些历史层次的理想工具。思考物质遗留的生命周期为我们在理解文化历史时提供了线索。在这些过程一遍又一遍地上演时，它们书写并改写着景观的历史。奥斯伯特·盖伊·斯坦霍普·克劳福德，一位20世纪初期具有很大影响力的景观考古学家，曾经将景观譬喻为：

“一个重写本，一个曾经被书写并一次次抹去的文档……其关注的重点是……人类劳动的成果；它们是刻在土地上的字母与词汇。但是阅读它们并不容易，因为……土地也随着岁月流逝而持续地变化。”^[2]

考虑这些不断被抹去及改写的周期对理解去工业化场地的过去，并对其未来进行设想至关重要。我们该如何从这一视角来审视对诸如工业遗址等特定场地的未来进行规划的方式？

几个世纪以来，人类一直都对留在景观中的早期建构废墟有着浓厚的兴趣。如今，我们在去工业化的场地上发现了相对较新的废墟。景观设计师对遗址进行浪漫化处理已有很长一段历史，尤其是在18世纪的画意风格运动的影响之下。这些荒废的建构为了唤起对遐想中先前美好时光的“乡愁”^[3]。这些将废墟塑造成衰败的美学产物的设计情绪化、浪漫化了过去。今日，去工业化场地上的废墟是人类快速工业化的物质遗迹。但不可思议的是，几个世纪后，景观设计师仍然固守画意风格的方式，借由浪漫化这些遗迹，表达对工业化过去的怀念。



抽象、引用，或者歌颂这些物质遗留的设计手法都是被动的，对重新构想去工业化场地的完整未来来说反而适得其反。它们成为了我们迈向未来的牵绊。就像300年前的画意风格一样，在浪漫化景观的过程中，艺术化的废墟成了被冷冻的、一成不变的事物。位于华盛顿州西雅图由理查德·哈格设计的瓦斯工厂公园，旧的工业建构成为仅用于感伤的废墟，别无它用。的确，作为美国这类景观设计项目的首例，瓦斯工厂公园项目标志着我们对这些场地的认识，以及应当如何从专业角度看待并设计它们的转折点；从这一点上来说，这个项目意义非凡。然而，作为该项目的核心，其设计手法



rewriting is crucial for understanding the past and imagining the future of deindustrializing sites. How can we use this lens to develop a method for approaching the future of a specific site, such as an industrial ruin?

For centuries, humans have had a profound curiosity about ruined structures left in the landscape from an earlier time. Today, we find relatively recent ruins on deindustrialized sites. Landscape architects have a long history of romanticizing ruins, particularly in the picturesque movement of the 18th century. These dilapidated structures “harkened back nostalgically” to an earlier, supposedly better time^[3]. The use of the ruin as an aesthetic object of decay sentimentalized and romanticized the past. Today, ruins on deindustrialized sites are material relics from humanity’s rapid industrialization. Surprisingly, centuries later, landscape architects cling to the picturesque tendency to romanticize these objects, full of nostalgia for the industrial past.

Design approaches that abstract, reference, or celebrate these material remnants are passive approaches, and are counter productive for reimagining the full potentials of deindustrializing sites. They prevent us from moving forward into the future. Aestheticized ruins become frozen, stagnant objects romanticized in the landscape, just as they were 300 years ago during the picturesque. At Gas Works Park in Seattle, WA by Richard Haag, the old industrial structures became nothing more than sentimentalized ruins. As the first landscape architecture project of its kind in the U.S, Gas Works marked a turning point in our awareness of these sites and how the profession is equipped to approach them; as such, the project is highly significant. However, at its core, the design approach was recycled from the picturesque ruin and the pastoral park. The landscape becomes sprinkled with lawn, serving as a platform or pedestal for the display of the ruin, much like an art museum or a sculpture park. Elizabeth Meyer critiques this approach, which robs the landscape of character, making it placeless and ubiquitous. She laments the invisibility of industrial history in these parks, noticing that

“that history — and the processes of settling, decomposition,



- 1893年桑伯恩地图显示了伊萨卡瀑布附近的各种工业与提供水电的轨道之间的关系。© Tompkins County NYGenWeb Project, USGenWeb Project
- 20世纪初期，冬季的伊萨卡瀑布及峡谷周边散落的各种工业通过轨道连通水电。© Tompkins County NYGenWeb Project, USGenWeb Project
- 该照片摄于20世纪初期，背景是伊萨卡枪械工厂，前景为伊萨卡造纸厂。照片彰显了这些工业通过共同使用水电形成的直接联系。© Tompkins County NYGenWeb Project, USGenWeb Project
- 1893 Sanborn Map showing the various industries that developed around Ithaca Falls in relation to the raceway, supply access to hydropower. © Tompkins County NYGenWeb Project, USGenWeb Project
- Early 1900s photograph of Ithaca Falls in the winter with the various industries sprinkled up the gorge, accessing its hydropower via the raceway. © Tompkins County NYGenWeb Project, USGenWeb Project
- Early 1900s photograph of Ithaca Gun Factory in the background, with the Ithaca Paper Mills in the foreground, highlighting a direct relationship between these industries through the hydropower they access together. © Tompkins County NYGenWeb Project, USGenWeb Project

remediation, and groundwater seepage that might accompany it — is hidden under a thin green veneer of grass and asphalt. Like the open-space parks of the mid-twentieth century, these early large parks on industrial sites were a form of forgetting and deception.”^[4]

With these antiquated approaches, the landscape is rendered non-operative and prevents visitors from having an experiential encounter with the site, its past, its present processes, and its future.

Many of these deindustrialized sites were packaged in a “thin green veneer” as a way to assuage a collective cultural anxiety about our industrial past, generated by the presence of material contaminants in these landscapes. Meyer appropriately calls these landscapes “disturbed sites”, since “... they have been disturbed by new processes — interrupted and interfered with — and that alteration disturbs us, makes us uneasy, anxious, worried, and agitated.”^[4] Our anxiety about the toxicity of these sites



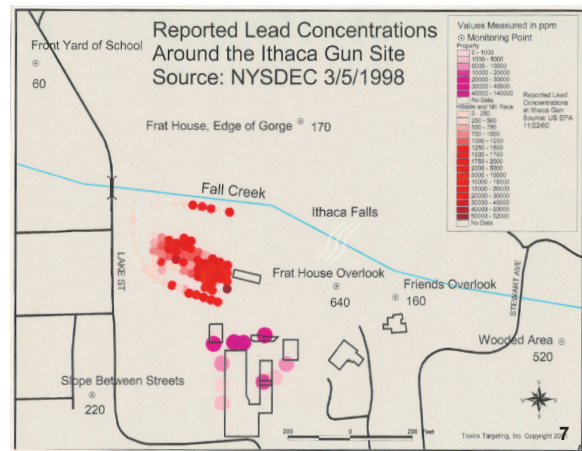
仍脱胎于过时的画意风格的虚墟和田园式的公园。景观成为了散布着草坪的空间，沦为展示废墟的一个平台或者基座，使场地仿佛变成了一个艺术博物馆或雕塑公园。伊丽莎白·梅耶对这一手法进行了批判，认为该手法剥夺了景观特色，使其失去了场所感和独特性。她对于这些公园中看不到原有的工业历史性表达了惋惜，她指出：

“历史——以及可能相伴随的沉淀、分解、治理、和地下水渗漏——被隐藏在—层薄薄的草地和沥青铺面之下。如同20世纪中期的开放式公园，这些早期修建在工业场地上的大型公园都是某种形式的遗忘与欺骗。”^[4]

在这些过时的设计手法的塑造下，景观失去功能，并阻碍访客去经历与感受场地的过去、现在，以及未来。

很多这种去工业化的场地都被包装上了一层“薄薄的绿色铺面”，作为缓解我们对于工业化时代的集体文化焦虑的一种方式。这种焦虑源于这些景观中存在的污染物。梅耶恰当地将这种景观称作“被干扰的场地”，因为它们被新的过程所干扰——被打断及干涉——这种变化困扰着我们，让我们变得不安、焦虑、担忧，以及躁动。”^[4]我们对于这些场地毒性的焦虑常常促使我们使用最快捷也是最便宜的解决方案：将有毒的土壤挖掘出来并送至垃圾填埋场，掩埋到别的地方，试图“眼不见心不烦”，让它变成别人的问题。这种焦虑是无效的，因为它无法使我们批判性地看待问题，抑或做出最适合场地、项目，以及我们所生活的这座星球的决策。我们必须利用场地上的物质遗迹，直面这些景观问题。

伊萨卡枪械工厂（图1）正经历着这些常见的轨迹，既有有毒的物质遗留，又有大型的废墟。伊萨卡枪械工厂和伊萨卡瀑布观景台的现有整合方案，所采取的正是由焦虑驱使型的被动手法，其方案旨在清除有毒物质，以创建公园及公寓楼。但其丰富的历史需要得到更多的关注。很多依赖水力发电的工业于19世纪初在伊萨卡瀑布区域开展（图2，3），比如伊萨卡造纸厂及造纸公司、锯木厂，以及石膏厂（图4）。伊萨卡枪械公司与这些工业同时发展，在1885~1987年世界大战和工业革命期间，它成为了伊萨卡市的骄傲（图5）。伊萨卡枪械公司为制造及测试其专利枪械，向瀑布溪流峡谷对岸射发子弹（图6）。20世纪90年代期间，由于场地中发现因枪械测试残留的高浓度铅含量引起了当地社区的焦虑与恐慌，场地的历史因此被蒙上了一层阴影（图7）。21世纪初期，美国国家环境保护局提取并转移了场地污染物，使其达到居住使用的安全标准。然而，由于侵蚀作用，场地中的铅含量不降反升，使这片景观更加地被边缘化。随着20世纪90年代中期伊萨卡瀑布周边众多工业（图8）的衰退和废弃，留下了许多可见的废墟。很多现在仍遗留在场地上，并且部分遗址通过重新适应，成为了通向伊萨卡瀑布的路径（图9）。伊萨卡枪械工厂成为了其中最大及最醒目的遗址。它的主要生产设施在2010年被拆除，但地基和混凝土基座遗留了下来（图10）。其中保留最完好的人工构筑物，是可以从城市大部分地方都能看到的烟囱（图11）。像伊萨卡枪械工厂和伊萨卡瀑布这样的景观拥有工业生产的丰富历史，当我们用被动的手法来处理时，我们已错失机遇。



6. 1900年代初期伊萨卡枪械公司广告 © Ithaca Gun Company
7. 1998年纽约州环境保护部门在伊萨卡枪械工厂场地及周边产权中探测的铅浓度地图。© NYSDEC
6. Early 1900s Ithaca Gun Company Advertisement. © Ithaca Gun Company
7. 1998 New York State Department of Environmental Protection Map of Lead Concentrations found on the Ithaca Gun Factory Site and neighboring properties. © NYSDEC

often urges us to react by employing the fastest and cheapest solutions: getting the problem out of sight and out of mind by digging it up and sending it to a landfill, to be buried somewhere else and become someone else's problem. This anxiety is unproductive, because it does not allow us to think critically about the problem or make decisions that would be most appropriate for the site, project, or planet. These landscapes must be engaged with and confronted head on, working with material legacies directly on site.

Ithaca Gun Factory (Fig. 1) is experiencing these typical trajectories, with material legacies in the form of toxicity as well as large ruins. Current plans for the Ithaca Gun Factory and Ithaca Falls Overlook site take the passive, anxiety-driven approach, with a proposal that aims to haul away the toxic materials in order to create a park and build condominiums. But the site's rich history begs for attention. Many industries dependent on hydropower developed around the Ithaca Falls area during the 1800s (Fig. 2, 3), such as the Ithaca Paper Mill and Paper Company, a saw mill, and a plaster mill (Fig. 4). Ithaca Gun Company developed in parallel with these other industries, and became a place of pride for the City of Ithaca when it operated from 1885~1987 during the World Wars and industrial revolution (Fig. 5). The company manufactured and tested proprietary guns (Fig. 6) by shooting across the Fall Creek gorge. In the 1990s, the site-generated anxiety and fear in the community when high concentrations of lead leftover from gun testing were discovered, casting a dark shadow over the site's history (Fig. 7).

In the early 2000s, the EPA extracted and hauled away contaminants from the site to get it to a standard safe for residential use. However, due to erosion, more concentrations of lead have been discovered, further marginalizing this landscape. As the various industries around Ithaca Falls (Fig. 8) declined and abandoned their sites during the mid-1900s, they left behind physical ruins in the landscape, many of which are still present and partially readapted today as part of the access to Ithaca Falls (Fig. 9). Ithaca Gun Factory left behind the largest and most visible of all these ruins. Its main production facility

was demolished in 2010, but its foundations and concrete pads remain (Fig. 10). One of its most intact artifacts is the smoke stack, which can be seen throughout most of the city (Fig. 11). Landscapes like Ithaca Gun and Ithaca Falls have a legacy of production, and there was a missed opportunity when they were transformed into passive surfaces. To approach disturbed, derelict, and wasted sites containing ruins and contaminants like these, we need to reactivate them by building on the productivity of their past and allowing them to continue to change through future processes. We ultimately need landscape-based strategies that maintain the spirit of change by engaging with the social, cultural, ecological, and industrial processes that continuously shape and reshape our landscapes.

The future of deindustrializing landscapes should be reimagined in ways that enable a new and productive understanding of the site itself, by bridging the past with the future using the material traces left on the land. In considering this future, it is important to understand that “[r]elationships between people, places, and things can be traced and explained not only in past landscapes, but also from past to present, and on into the future.”^[5] In order to move beyond antiquated landscape approaches, it is necessary to engage with the material remnant on site,



8. 伊萨卡瀑布（摄于2014年10月）© Catherine De Almeida
8. Ithaca Falls in October 2014 © Catherine De Almeida



9. 瀑布溪谷厂留下的废墟保存至今（摄于2014年10月）。© Catherine De Almeida
9. Ruins left by the Fall Creek Mills still exist today, photographed in October 2014. © Catherine De Almeida

在处理像这样有着废墟以及污染物，被干扰、遗弃以及废弃的场地时，我们需要利用其过去的生产力来重新激活它们，并允许它们在未来过程中继续地改变。最终，我们需要以景观为基础的策略，通过持续塑造和重塑我们景观的社会、文化、生态和工业过程，来延续变化的精神。

去工业化景观的未来，应从能赋予场地新生产力的方向来重新思考，利用土地上留下的物质遗迹来连接过去与未来。在考虑未来时，很重要的一点是要理解“人、场所、事物之间的联系不仅仅可以在过去的景观中追寻与解释，在从过去接续到现在，再到未来的景观中亦是如此”^[5]。为了超越过时的景观手法，我们必须应用场地上包括有毒物质的各种物质残留。这些场地需要一个以过程为基础：在治理及后续期间，可以与场地、历史，以及衰退过程相互作用的手法。像伊萨卡枪械工厂和其他伊萨卡瀑布附近的场地之所以存在，是因为它们的生产、消耗以及废弃过程是工业给予的。当工业离开后，生态过程取而代之，在场地上继续发生，将其衰退过程转化为生产力。景观设计学需要应用景观考古学的方法来设计这些场地的时空动态，理解景观在长

期的变化下的持续转化。

如果我们采取景观考古学的策略来设计伊萨卡枪械和伊萨卡瀑布场地，可以重新思考如何依循工业生产及社区骄傲的历史，保留场地变化过程的精神，而非单单歌颂某一特定时间、特定用途留下的遗迹。我提议将一个注重生产的主动性项目，与一个通过教育与休闲鼓励社区参与的被动性项目整合起来。增强这些场地的可达性永远是首要的，但是重造场地的过程更应该先行。整治的过程应该是公开可见的，而非移除或是隐藏在一个“薄薄的绿色铺面”之下。所有的物质遗留应当被保存在现场，来参与景观的更新。有毒物质可以统一集中到场地的一个区域，使场地附近的开发得以同时进行。污染物降解可以在不影响现存景观的社会与文化生产力的前提下，长时间地进行。场地上可以加以利用的遗产可以通过创造支持景观生产力的物质来延续，形成可以自给自足且具经济效益的景观。场地可以自我继续而不需要高度依赖外界资源。通过对景观采取生命周期的方法，它们成为了更大的历史过程——这些过程曾经存在并将继续演进——生命周期中的一环，成为了场地生产力和活力的一部分。LAF

including the toxic ones. These sites require a process-based approach; one that interacts with the site, its history, and processes of decay in both its remediation and afterlife. Sites like the Ithaca Gun Factory and others around Ithaca Falls exist because their processes of production, consumption, and disposal were fed by industry. After industries leave, ecological processes take their place in consuming the site, making it productive in its decay. Landscape architecture needs to approach the temporal dynamics of these sites in the same way that landscape archaeology does, understanding that landscapes are continuously transformed by long term change.

If we employ a strategy of design archaeology on the Ithaca Gun and Ithaca Falls site, we can rethink our approaches to follow in the legacy of industrial production and community pride, maintaining the spirit of the site through process and change, rather than celebrating one particular use in time with its material leftovers. I propose pairing an active program focused on production with a passive program that engages with the community through education and recreation. Increased access to these sites is always a priority, but access to the process of remaking the site should be foregrounded. The process of remediation should be made visible, not trucked away or hidden under a “thin green veneer”. All material remnants should remain on site to feed the renewal of the landscape. Toxicity can be concentrated into one area on the site, allowing for development around the site to begin in parallel. Degradation of contaminants can take place over a longer period of time without limiting the social and cultural productivity of the remaining parts of the landscape. The site’s active legacy may continue by producing materials that feed the landscape’s productivity, and by generating power in order to create a self-sufficient and economically viable landscape. The site can maintain itself without having to rely heavily on external resources. By utilizing a lifecycle approach to these landscapes, they become part of a larger lifecycle of historic processes that once were, and may continue to be, part of the productivity and activity of the site. LAF



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 10. Photograph of the Ithaca Gun site, showing the decaying bridge across the raceway and the concrete pad left by one of the buildings. Photographed in October 2014. © Catherine De Almeida
 11. Photograph of the Ithaca Gun site, showing the prominent smoke stack and the remnant concrete foundations left by the main building. Photographed in October 2014. © Catherine De Almeida

