

WILLAMETTE FALLS: THE CHALLENGE OF PLANNING WITH FINITE RESOURCES

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The terminal studio gives an architecture student his or her first major opportunity to conceive of, research, and propose a solution to a problem perceived by the student to be worthy of intense exploration. The myriad of projects that appear each academic year is a reflection of the extreme uniqueness of the individual thought process. Through careful consideration and as a result of the forces and professionals that have been influential, the proposed terminal studio will be an exercise in master planning first and architecture second. The chosen site is the southern end of Oregon City where Blue Heron Paper Company currently resides, as well as the island across the Willamette River, home to West Lynn Paper Company. This site was chosen because of its location, history, potential for change, and complexity, factors that when seen together, produce an intriguing design opportunity.

The research and subsequent conclusion reached here will guide in the master planning of the site. The question to be answered is this: Should the threat of dwindling fossil fuel resources influence master planning design decisions at the Willamette Falls? More specifically, should programmatic choices be swayed towards providing for local needs in light of this threat?

The starting block from where this question will be contemplated begins with raw numerical data regarding the world's usage of fossil fuels, namely oil, natural gas, and coal, in relation to production over time from the beginning of the Industrial Revolution. Although it sounds overwhelming, it is actually explained quite simply through the use of a few simple charts.

THE GROWING GAP Regular Conventional Oil

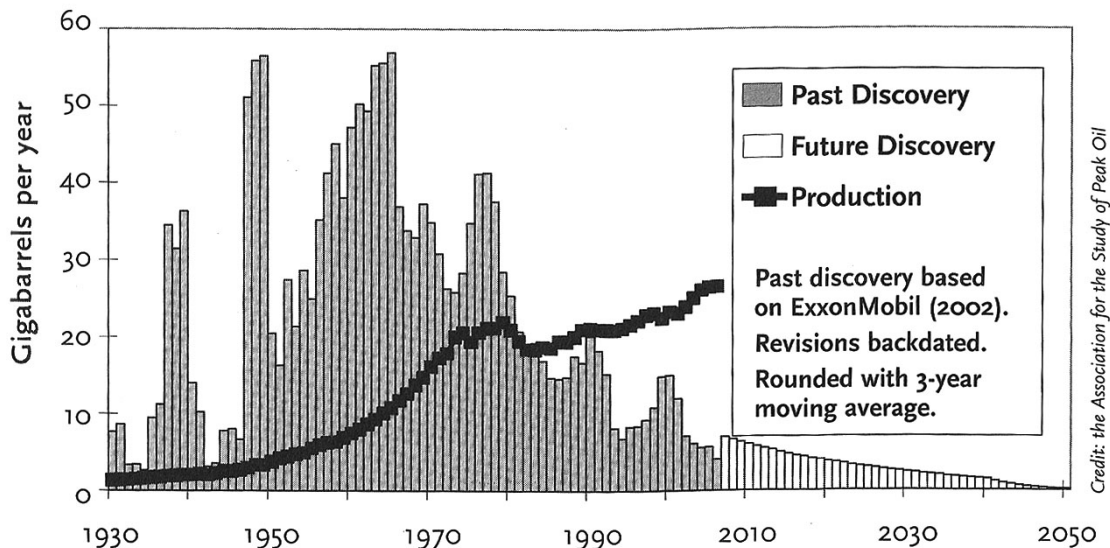
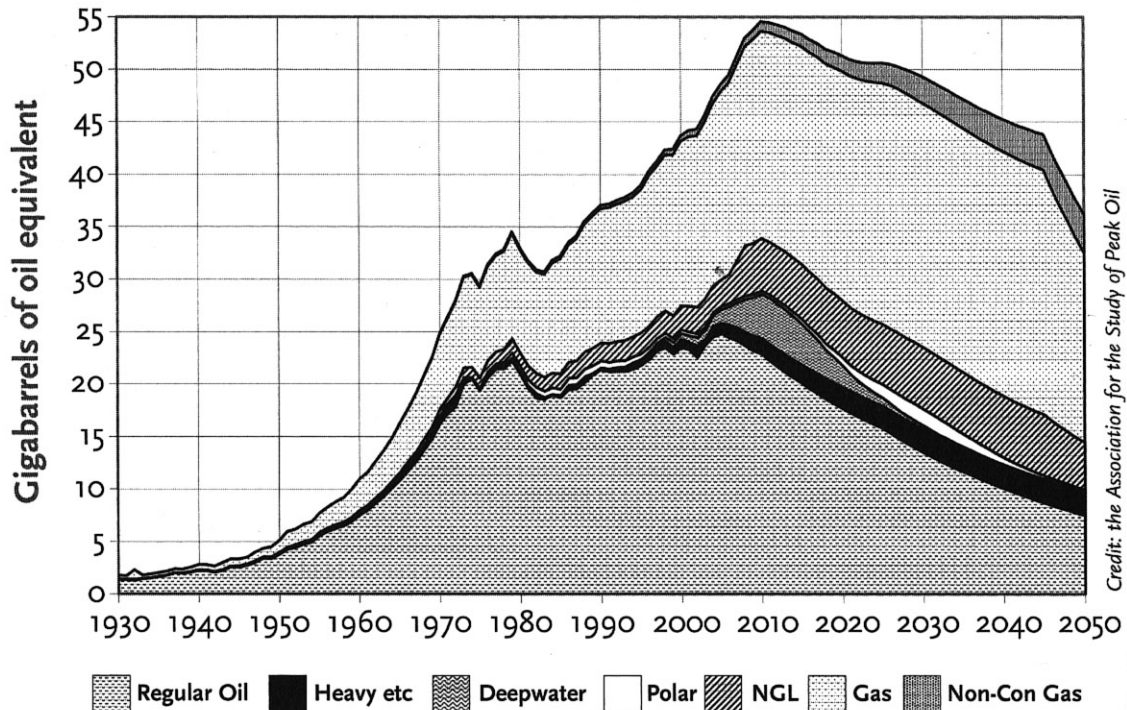


Figure 2. The peak in oil discovery and the widening gap between discovery and production.

Graph taken from "The Transition Handbook"

OIL & GAS PRODUCTION PROFILES 2006 Base Case



Credit: the Association for the Study of Peak Oil

Graph taken from "The Transition Handbook"

So what do the numbers mean? Does a sudden decline in the fuel the world depends on most, oil, and slow declines in natural gas and coal discovery and production mean a shift in the way the United States economy and communities function? According to Adam Smith's views expressed in his 1776 publication of *Wealth of Nations*, in order for an economy to yield the most positive result for all, individual interest should be placed ahead of the interest of the public in a free-market economy. Self-interest should come first, and positive results will occur in the public realm as a by-product of the individual taking whatever material possessions he can grab. Competition is the key in this model, the same model that dominates the world market today. It is no coincidence that the birth of Smith's ideas came at the same time as the advent of the advanced steam engine by James Watt. The Industrial Revolution had begun and would continue to produce growth at an exponential level up until this current moment (Murphy, 20).

It is paramount at this point to stress the vital connection between the global economy and consumption. Economists who support Smith's model must do so by first assuming that the world has an infinite supply of raw materials needed to create the goods and products consumers will continually demand, as well as an infinite 'sink' for the waste by-products generated by using these materials. If a certain resource declines, then something new will be developed to seamlessly take its place, and the economy will keep buzzing along. Also, the term "externalization" is given to unwanted factors in an equation that make a problem impossible to solve, thereby excluding those factors altogether and tailoring the equation to fit the needs of the market (Murphy 20-21,29). This is unrealistic. Oversights in planning and problem-solving of this magnitude can be blamed for catastrophies like The Great Depression.

A new breed of economists have seen the light. Pat Murphy, who is the executive director of a non-profit organization called Community Solutions whose goal is to reduce energy consumption in food production, housing and transportation, writes that this new group's "focus is on contemporary, community-based, steady-state economics." They understand that the ecosystem within which our species functions and grows is finite and that the human race can only expand within these boundaries. How gracefully it occurs and with what impact on the ecosystem is another issue. The important thing to remember is that a shift in thought about the global economy model has occurred and may help to change the dead-end direction in which we are headed (Murphy 29-30). Economist Michael Perelman says that "We should move as quickly as possible to a more democratic, more egalitarian, more sustainable society before it is too late" (Perelman, 183). What this translates into is a local economy where, at the least, every need is provided for within the community, or close enough that the movement of goods is still viable. This also means the redefining of the word 'consumer' to mean what it did in the past; that the consumer is also "a neighbor, a fellow citizen and a member of the community" (Murphy 31).

"The time for seeing globalisation as an invincible behemoth, or localisation as some kind of lifestyle choice, is over," said Rob Hopkins in 2008. In his book, *The Transition Handbook, From Oil Dependency to Local Resilience*, Hopkins outlines ways in which communities can build a foundation of resilience that will be a major aid in reducing energy needs when the inevitable energy shortages begin to happen. He proposes that by reinvigorating local agriculture and food production, using local building materials while focusing on designing zero energy buildings, and rethinking health care and waste management, communities will be proactive and ready for adverse times ahead (Hopkins, 15). In much the same way cheap fossil fuels brought about the first migration of people to unsustainable ways of life, the depletion of the same resources will cause a shift back to a more agrarian, local, and sustainable culture (Hopkins, 257).

In addition to economists, geologists, and theorists, architects and planners have had a substantial role in trying to shape the future of what a shortage of cheap fossil fuels could mean. In the 1980's, a group of architects and planners came together to address the problems that the post-WWII suburban model was causing. The Congress for the New Urbanism was formed in order to organize the critique and offer a model for rethinking and redesigning our communities. One of the major criticisms of sprawl that emerged is tied directly to cheap fuel and the assumption that it is infinite. The New Urbanists felt, and still feel, that by allowing suburban communities to be designed primarily around the automobile, not only was fuel and energy of all kinds being carelessly thrown away through wasted space and infrastructure, but many other social deficiencies were springing up. One of the key components proposed by New Urbanists in their manifesto is the five minute walking radius. As a result of a study, it was found that most people are willing to walk five minutes, or a quarter of a mile, in order to purchase daily needs such as bread, milk, eggs, and so on. Although this is only one tool, it is a very important one that removed the car from the equation. This also begins to give form to how program and services are built into a community structure (Dutton, 15-17).

The subject of peak oil, not to mention the inseparable topic of climate change, is a very broad one about which many books have been written and speeches have been given. The many passionate advocates of smart planning, building, and proactive decision-making have influenced me and convinced me that yes, the planning and programmatic decisions that I make for the

Willamette Falls site should respond directly to the issues of dwindling resources. Just as the site presents great opportunity for positive change, it can just as easily be planned irresponsibly if the finite quality of our ecosystem is not taken into account. The proposed program needs to respond to local needs and attempt to fill in the gaps where those needs have not yet been met.

My next steps towards fulfilling the needs of local falls residents will be to find out more specifically what those needs are. Most of the infrastructure on the site is still in use, some buildings are abandoned, and the locks have gained new excitement and renewed purpose through historic designation and annual celebration. I will focus on what types of program will strengthen both Oregon City and West Linn as self-sufficient centers and help to strengthen the connection between them via the Willamette Falls and the opportunities that exist therein. There is an opportunity to extend the downtown of Oregon City and propose a new industry on the West Linn site that will provide jobs to factory workers from both paper mills. This new industry will move the region forward as it will be geared towards producing sustainable goods.

The infrastructure surrounding the Willamette Falls on both the Oregon City and West Linn sides tells a story as old as the Oregon Trail and as current and continuous as the flowing water that brought settlers there in the first place. The history of the site will be celebrated, while keeping in mind that planning for the future is just as crucial as remembrance of the past and the continued interest in the story of the falls.

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