

The Complex History of Sustainability

An index of Trends, Authors, Projects and Fiction

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Made for VOLUME magazine as a follow-up of issue 18, *After Zero*.
See the timeline here: archis.org/history-of-sustainability

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Introduction

Speaking about the environment today apparently means speaking about Sustainability. Theoretically, no one can take a stand against Sustainability because there is no definition of it. Neither is there a history of Sustainability. The S-word seems to point to a universal idea, valid anywhere, at any time.

Although the notion of Sustainability appeared for the first time in Germany in the 18th century (as *Nachhaltigkeit*), in fact Sustainability (and the creative oxymoron 'Sustainable Development') is a young concept. Developed in the early seventies, it was formalized and officially adopted by the international community in 1987 in the UN report 'Our Common Future'.

Looking back, we see that Western society has always been obsessed by its relationship with the environment, with what is meant to be outside ourselves, or, as some call it, nature.

Many ideas preceded the notion of Sustainability and even today there are various trends and original ideas following old ideological traditions. Some of these directly oppose Sustainability.

This timeline is a subjective attempt to historically map the different ideas around the relationship between humans and their environment.

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Part I
Projects

The Arcology (1969)

Arcology, from the words "ecology" and "architecture," is a set of architectural design principles aimed toward the design of enormous habitats (hyperstructures) of extremely high human population density. These largely hypothetical structures, called "arcologies," would contain a variety of residential and commercial facilities and minimize individual human environmental impact. They are often portrayed as self-contained or economically self-sufficient. The concept has been primarily popularized by architect Paolo Soleri, and appears commonly in science fiction as well as in video gaming.

Arcosanti (1970)

Arcosanti is an experimental town that began construction in 1970 in central Arizona, 110 km north of Phoenix. Architect Paolo Soleri, using a concept he calls arcology (a portmanteau of architecture and ecology), started the town to demonstrate how urban conditions could be improved while minimizing the destructive impact on the earth.

Ark Bioshelter (1976)

A bioshelter is a solar greenhouse managed as an indoor ecosystem. The word bioshelter was coined by the New Alchemy Institute and solar designers Sean Wellesley-Miller and Day Chahroudi (Todd, J, Todd, N 1994). The term was created to distinguish their work in greenhouse design and management from twentieth century petro-chemical fuelled monoculture greenhouses. New Alchemy's pioneering work in ecological design is documented in their published Journals and Reports. In 1976 the Alchemists built the Cape Cod Ark bioshelter and her sister, The Prince Edward Island Ark. For the next 15 years the New Alchemy Institute studied and reported on the use of these prototype food producing ecosystems.

Bionic Tower Shanghai (2015)

The Bionic Tower is a proposed vertical city, an extremely large building designed for human habitation, designed by Spanish architects Eloy Celaya, and Rosa Cervera and Javier Gómez Pioz. It would have a main

tower 1,228 metres (4,029 ft) high, with 300 stories that would house about 100,000 people. During his administration Xu Kuangdi, former mayor of Shanghai, expressed an interest in the concept for the city. The city of Hong Kong is also interested in the project.

Bios 1-3 (1965-1972)

First Soviet closed ecosystem experiments in Syberia.

Biosphere 2 (1991)

Biosphere 2 is a 314-acre (127 ha) structure originally built to be an artificial closed ecological system in Oracle, Arizona (USA) by Space Biosphere Ventures, a company whose principal officers were John Polk Allen and Margret Augustine. Constructed between 1987 and 1991, it was used to explore the complex web of interactions within life systems. It also explored the possible use of closed biospheres in space colonization, and allowed the study and manipulation of a biosphere without harming Earth's.

La Bolla (1992)

Closed ecosystem dome in Genoa, designed by Renzo Piano.

Broadacre City (1932)

Broadacre City was an urban or suburban development concept proposed by Frank Lloyd Wright late in his life. He presented the idea in his article *The Disappearing City* in 1932.

Broadacre City was the antithesis of a city and the apotheosis of the newly born suburbia, shaped through Wright's particular vision. It was both a planning statement and a socio-political scheme by which each US family would be given a one acre (4,000 square metres) plot of land from the federal lands reserves, and a Wright-conceived community would be built anew from this. In a sense it was the exact opposite of transit-oriented development. There is a train station and a few office and apartment buildings in Broadacre City, but the apartment dwellers are

expected to be a small minority. All important transport is done by automobile and the pedestrian can exist safely only within the confines of the one acre (4,000 square metres) plots where most of the population dwells.

Dongtan (2005-2040)

Dongtan is a new eco-city planned for the island of Chongming, near Shanghai, China. The name of the city literally translates as "East Beach". Dongtan was designed by Arup, a British engineering firm, and is being built on a major wetland site that was formerly used for small-scale agriculture and by migrating water birds. Dongtan was presented at the United Nations World Urban Forum by China as an example of an eco-city, and is the first of up to four such cities to be designed and built in China by Arup. The cities are planned to be ecologically friendly, with zero-greenhouse-emission transit and complete self-sufficiency in water and energy, together with the use of zero energy building principles. However, the planned ecological footprint for each citizen in Dongtan is currently 22 hectares, higher than the 19 hectares that the World Wildlife Fund claims is theoretically sustainable on a global scale.

Drop City (1963)

Drop City was an artists' community that formed in southern Colorado in 1965. Residents constructed domes and zonohedra to house themselves, using geometric panels made from the metal of automobile roofs and other inexpensive materials. Abandoned by the early 1970s, it became known as the first rural "hippy commune".

Dutch Pavilion at Expo2000 (2000)

The Dutch pavilion at Expo 2000 in Hannover was one of the most popular buildings winning international acclaim and was designed by the firm MVRDV. The theme of the 36m high building (the fair's tallest structure) was "Holland creates Space". Six Holland eco-system landscapes were stacked to showcase how a country can make the most out of a small space. Guests entered on the ground floor and using grand exterior staircases (that wrapped around the building) as to move through the exhibit space.

Dymaxion House (1926)

The Dymaxion House was developed by inventor Buckminster Fuller to address several perceived shortcomings with existing homebuilding techniques. Fuller designed several different versions of the house at different times, but they were all factory manufactured kits, assembled on site, intended to be suitable for any site or environment and to use resources efficiently. One important design consideration was ease of shipment and assembly.

The Eden Project (2005)

The Eden Project is a visitor attraction, including the world's largest greenhouse. The project is located in a reclaimed Kaolinite pit, located 125 miles (2 km) from the town of St Blazey and 3 miles (5 km) from the larger town of St Austell, Cornwall, United Kingdom. The complex comprises a number of domes that house plant species from around the world, with each emulating a natural biome. The domes are made out of hundreds of hexagons plus a few pentagons that interconnect the whole construction together; each of these is a transparent cushion made of tough plastic. The first dome emulates a tropical environment, the second a warm temperate, Mediterranean environment.

Forest Hills Gardens (1908)

Forest Hills Gardens is a community located in Forest Hills, in the New York City borough of Queens. The area consists of a 142-acre (0.57 square km) development, fashioned after a traditional English Village, that is one of the country's oldest planned communities and the most prominent American example of Ebenezer Howard's Garden city movement. The community, founded in 1908, consists of about 800 homes, townhouses, and apartment buildings, mostly in Tudor, Brick Tudor or Georgian style, in a parklike setting designed by Frederick Law Olmsted Jr., son of noted landscape architect Frederick Law Olmsted and partner in the Olmsted Brothers firm.

Geodesic Dome at Expo67, Montreal (1967)

The building originally formed an enclosed structure of steel and acrylic cells, 76 meters (250 ft) in diameter and 62 meters (200 ft) high. A complex system of shades was used to control the internal temperature.

Geodesic Dome Over Manhattan (1962)

Richard Buckminster Fuller proposed a geodesic dome over Manhattan to provide free climate control in any season for the inhabitants. The energy savings would have re-paid the construction costs in ten years.

Great Conservatory Chatsworth (1837)

The largest greenhouse of the world when it was built by Joseph Paxton for the gardens of the country house at Chatsworth, Derbyshire, England. After the World War II it was demolished as it needed ten men to run it and huge quantities of coal to heat it. All the plants had died during the war when no coal had been available for non-essential purposes.

Green Building (1990)

Project by Future Systems, aiming at designing an eco-climatic building without primitive forms, through the use of advanced technologies.

Hellerau (1914)

Hellerau is a district in the City of Dresden, Germany. It was the first garden city in Germany.

Inventory Of World Resources, Human Trends and Needs (1963)

A book by Richard Buckminster-Fuller and John McHale.

Jean Marie Tjibaou Cultural Center (1991-1998)

The Jean-Marie Tjibaou Cultural Center was designed by Italian architect Renzo Piano with the concept of celebrating the vernacular Kanak (also, Canaque) culture of New Caledonia. The centre is composed of 10 units called "cases," all of different sizes and different functions, but with the consistent form of vertically positioned shell-like structures which resemble the traditional huts of a Caledonian Village. They were given a deliberate "unfinished" appearance as a reminder that Kanak culture is still in the process of becoming - a belief held by the deceased Canaque leader, and inspiration for the site, Jean-Marie Tjibaou.

Letchworth Garden City (1903)

Letchworth Garden City, more commonly Letchworth, is a town in Hertfordshire, England. The Garden City was founded in 1903 by Ebenezer Howard, was one of the first new towns, and is the world's first Garden City.

Liberty Gardens (1917-1918)

During World War I and II gardening became a patriotic and fulfilling activity for all Americans, both from the United States and Canada, promoted by governments to reduce the pressure on the public food supply brought on by the war effort. In addition to indirectly aiding the war effort these gardens were also considered a civil "morale booster" - in that gardeners could feel empowered by their contribution of labor and rewarded by the produce grown. Making victory gardens became a part of daily life in the home front.

Light Urbanism (1996)

Proposal by MVRDV and Jon Kristinsson for a light, 'off the grid' urbanism, located south of Rotterdam. By making the roads and infrastructure of the estate 'lighter' it wouldn't be necessary to apply the radical sand packet. The local water-balance, the ecological carrier, in the shape of cleansing swamps and natural drainage-systems is allowed room. Not only hardening, but also other infrastructural elements can be lighter. No

telephone cables in the ground, but mobile telephones, no gas pipes but an electricity net connected to local alternative energy sources, no water purification centers at a distance but a water purification system in the garden. Source: smartarchitecture.org.

Linz Design Center (1994)

An evolution of the glass building, by Thomas Herzog. Inspired by Paxton's Crystal Palace, the curved glass roof incorporates computer controlled shading and air ventilation. A feedback system sees to it that the façade adapts itself to changing climatic or functional circumstances to create the most optimal conditions. An extensive nervous system with almost 2500 sensors register the conditions at several places in and around the building. Source: smartarchitecture.org.

Liz Christy Community Garden (1973)

The Liz Christy Garden is a community garden located at Bowery and Houston Streets in Manhattan on Parks Department's land. Started in 1973 by local resident Liz Christy, it was the first community garden in New York. The Liz Christy Garden is also the home to the tallest Dawn Redwood tree in Manhattan and was the first garden started by the Green Guerillas.

Masdar Ecocity (2007-2023)

Masdar (Arabic, literally the source) is a planned city in Abu Dhabi, in the United Arab Emirates. Its an initiative by the Government of Abu Dhabi through Mubadala Development Company Designed by the British architectural firm Foster and Partners, the city will rely entirely on solar energy and other renewable energy sources, with a sustainable, zero-carbon, zero-waste ecology.

Menara Mesiniaga Building (1992)

Menara Mesiniaga is a futuristic office building located in Malaysia, designed by Ken Yeang. It is one of the better examples of his Bio-climatic Architecture. The building - a wide 3 story base with entrance and public

provisions, a 12 story cylinder formed office volume and a roof construction with sun terrace and swimming pool - optimally uses the possibilities of the moderate tropical climate. It includes bioclimatic items like vertical landscaping, sky courts, full natural ventilation, etc.

Oldman River City Project (1971)

The Old Man River's City project was an architectural design created by Buckminster Fuller in 1971. Fuller was asked to design the structure from the city of East St Louis Old Man's River City would have been a truly massive housing project for the city's 70,000 residents. The total capacity of the building, a circular multi-terraced dome, would be 125,000 occupants Each family would have approximately 2,500 square feet (230 m²) of living space.

Potato Patches (1890-1930)

Urban gardening movement in the United States to relief population from poverty and unemployment caused by the economic crisis of 1893. The patches were promoted mainly by the Mayor of Detroit (a city hardly hit by the depression).

Pullman City (1880)

Pullman is a neighborhood on the South Side of Chicago, twelve miles from the Chicago Loop by Lake Calumet. Pullman was built in the 1880s by George Pullman for his eponymous railroad car company, the Pullman Palace Car Company on a desing by architect Solon Spencer Beman.

R128 (2000)

House R 128 (Sobek House) is a emission-free, self-sufficient single family house in Stuttgart, Germany, built by architect Werner Sobek in 1999-2000. The house features a modular and recyclable design, is completely glazed and has no interior dividing walls. It is computerized and meets its own energy requirements completely.

Sabaudia (1934)

Sabaudia is a coastal town in the province of Latina, Italy, designed in 1934 by a group of rationalist architects led by Luigi Piccinato. It is one of several towns built on reclaimed marshland near Rome. This marsh was drained under orders from Mussolini, and these towns were built so that the fascist regime could demonstrate the draining of the marshland.

As Pier Paolo Pasolini pointed out, Sabaudia doesn't show the typical rhetorics of the Fascist architecture of the period.

Shimzu Megacity Pyramid (2004)

The Shimizu TRY 2004 Mega-City Pyramid is a proposed project for construction of a massive pyramid over Tokyo Bay in Japan. The structure would be 12 times higher than the Great Pyramid at Giza, and would house 750,000 people. If built, it will be the largest man-made structure on Earth. The structure would be 2,004 meters (6,575 feet) high and would answer Tokyo's increasing lack of space. The proposed structure is so large that it cannot be built with currently available materials, due to their weight. The design relies on the future availability of super-strong lightweight materials based on carbon nanotubes.

Sky City 1000 (1989)

Sky City 1000 is a possible future urban supertall skyscraper project aimed at helping put an end to major congestion and lack of greenspace in the Tokyo, Japan metropolitan area.

Spacial City (1958)

Project by Yona Friedman, in which all the living spaces and transportation infrastructures are hung over the surface of the city, freeing ground space.

Sun Span House (Jacobs House) (1949)

One of the first of Frank Lloyd Wright's Usonian houses, this house in Middleton, Wisconsin incorporated innovative, ecological design ideas

with low buildings costs, client specific needs and wishes, self-building and a combination of prefab construction and organic materials. The house is semi-circular in plan and is half sunken in the site. The stone wall on the north side is covered with earth The south facade is fully glazed and curves around the garden. This 'solar-hemicycle' as Wright sometimes called it, is one of the first - and still one of the most convincing - examples of 'low cost' and 'low energy' architecture.

TaliesinWest (1937)

Taliesin West was architect Frank Lloyd Wright's winter home and school in the desert from 1937 until his death in 1959 at the age of 91. Today, it houses the Frank Lloyd Wright Foundation, a school for architects, and is open to the public for tours. It is located on Frank Lloyd Wright Boulevard in Scottsdale, Arizona in the United States His summer home, Taliesin, is in Spring Green, Wisconsin.

Thames Gateway CPUL (2005)

A Continuous productive urban landscape designed by Bohn and Viljoen for the city of London.

VictoryGardens (1940-1945)

Same as Liberty Gardens, but during the Second World War.

Welwyn Garden City (1920)

Welwyn Garden City is a town in Hertfordshire, England, founded by Sir Ebenezer Howard in the 1920s following his previous experiment in Letchworth Garden City, and designed by Louis de Soissons.

Whole Earth Catalogue

The Whole Earth Catalog by Stewart Brand is a compendium of tools, texts and information sought to "catalyze the emergence of a realm of

personal power" by making soft technology available to people eager to create sustainable communities.

Part II

Trends

Alternative Techno-ecologism

This is a heterogeneous group of researchers and designers seeking alternative technologies to cope with the finitude of natural resources. Solutions proposed are based on different approaches to scale (Schumacher), density (Kenworthy and Newmann), material cycles (Braungart and McDonough) and conviviality (Illich).

Anarco-primitivism

The anarchist critique of the origins and progress of civilization See also Eco-anarchism.

Anti-essentialism

These theories do not recognize nature as a self-standing entity, but as an ideological or discursive construction. See also Deconstruction, Post-structuralism, Eco-feminism, Anti-nature ecologism.

Anti-growth

A movement contesting economic reductionism and the ideology of development. Antigrowth theorists argue that the very nature of the notion of Western progress (violently exported to southern countries) is to be blamed for the environment's destruction. What they propose is an economy of un-growth (*décroissance*) (Latouche), a Zero-growth economy (Odum, Daly) or a 'self-sustainable local development' (Magnaghi).

Anti-nature Ecologism

Proponents of this theory have abandoned any idea of nature, pointing out that they are all ideological. Anti-nature ecologists argue that our very idea of nature is the cause of the damages we are inflicting on it.

Bio-economics (or Ecological Economics)

A trans-disciplinary field of academic research that addresses the metric of interdependence between human economies and natural ecosystems. Its main focus is the 'scale' conundrum, or how to operate an economy within the ecological constraints of the earth's resources. The founders of Ecological Economics were the German Karl W. Kapp and the Bulgarian-American Nicholas Georgescu-Roegen whose contribution was directed toward the integration of economic theory with the principles of thermodynamics.

Biomimicry

The artificial imitation of biological materials or processes.

Biogenetic Luddism

The luddist sabotage of bio-technology.

Bio-regionalism

Bio-regionalism's approach to political, cultural, and environmental issues is based on naturally-defined regional areas consistent with the concept of bioregions or ecoregions. These areas are usually based on a combination of physical and environmental features, including watershed boundaries and soil and terrain characteristics. Bio-regionalism stresses that the determination of a bioregion is also a cultural phenomenon - with phrases such as 'the politics of place' and 'terrain of consciousness' appearing in bio-regionalist writings - and places emphasis on local populations, knowledge and solutions.

Cybernetics

Cybernetics is the interdisciplinary study of the structure of regulatory systems. Cybernetics is closely related to control theory and Systems Theory. Both in its origins and in its evolution in the second-half of the 20th century, cybernetics is equally applicable to physical and social (that is, language-based) systems. Cybernetics is preeminent when the system

under scrutiny is involved in a closed signal loop where action by the system in an environment causes some change in the environment and that change is manifest to the system via information/feedback that causes changes in the way the system then behaves. All of this take place in the service of a goal or goals This 'circular causal' relationship is necessary and sufficient for a cybernetic perspective.

Deconstruction

Deconstruction is a term used in philosophy, literary criticism and the social sciences popularized by Jacques Derrida in the 1960s. It is 'A strategy of critical analysis directed towards exposing unquestioned metaphysical assumptions and internal contradictions in philosophical and literary language' (OED). Alongside Post-structuralism, Deconstructionist analysis of nature questions nature's ontological value as a self-standing, metaphysical entity.

Deep Ecology

The branch of environmental philosophy which considers human beings as part of the whole environment. Deep ecology has led to a new system of environmental ethics The core principle of deep ecology as originally developed is Arne Næss's doctrine of biospheric egalitarianism - the claim that, like humanity, the living environment as a whole has the same right to live and flourish.

Eco-anarchism

The anarchist school of thought emphasizes the environment. Some green anarchists can be described as anarcho-primitivists and sometimes anti-civilization anarchists, though not all green anarchists are primitivists. Likewise, there is a strong critique of technology among some green anarchists, though not all reject it entirely. Sometimes green anarchism is said to be techno-positive or techno-negative to differentiate between those who advocate use of advanced green technology to create and maintain an anarchist society and those who mainly see civilization and modern technology as something negative (see Anarcoprimitivism).

Eco-fascism / Eco-nazism

Extreme right-wing movements that incorporate environmentalist positions into their ideology. Nazi and fascist environmentalism is mainly a reactionary idea of the preservation of nature, seen as a symbol of national and racial identity.

Eco-feminism

Eco-feminism is a social and political movement which attempts to unite environmentalism and feminism with some currents linking Deep Ecology and feminism. Eco-feminists argue that a relationship exists between the oppression of women and the degradation of nature. They explore the intersectionality between sexism, the domination of nature, racism, speciesism and other characteristics of social inequality.

Ecology

The scientific study of the distribution and abundance of life and the interaction between organisms and their environment. Ecology is not based on the mechanistic paradigm (see Mechanicism), as life phenomena cannot always be interpreted through cause-effect patterns. On the contrary, by virtue of contributions from Biology, Evolutionism, Cybernetics, and Systems Theory, Ecology is considered a separate scientific paradigm.

Eco-marxism

Contrary to the depiction of Karl Marx as a productivist who favored the domination of nature, eco-Marxists have revisited Marx's writings and believe he was a main originator of the ecological world-view. Eco-Marxist authors, like John Bellamy Foster and Paul Burkett, point to Marx's discussion of a 'metabolic rift' between man and nature, his statement that 'private ownership of the globe by single individuals will appear quite absurd' and his observation that a society must 'hand it [the planet] down to succeeding generations in an improved condition'. Other Eco-socialists feel that Marx overlooked a 'recognition of nature in and for itself', ignoring its 'receptivity' and treating nature as 'subjected to labor from the start' in an 'entirely active relationship'.

Eco-phenomenology

Ecological phenomenologists argue that the environmental crisis is physical and metaphysical at the same time, and that a fundamental reconceptualization of human relationships with the earth is necessary to help undo the damage stemming from a contemporary Western history of separation from and utilitarian valuation and exploitation of the natural world.

Eco-socialism

The utopian reformist critique of capitalism aims for the reestablishment of pre-industrial lifestyles in order to preserve social relations and the environment.

Enlightenment

The Age of Enlightenment or the Enlightenment is a term used to describe a phase in Western philosophy and cultural history in the eighteenth century during which reason was advocated as the primary source and basis of authority. Enlightened philosophers were profoundly influenced by the scientific method of mechanical physics. Initially a progressive movement against religious authorities' and monarchic obscurantism, the Enlightenment was also responsible - Adorno and Horkheimer argued - for establishing the basis of modern Western society's reductionism.

Evolutionism

As developed by Charles Darwin and others, the theory of evolution describes the process of change in all forms of life over generations. An organism inherits features (traits) from its parents through genes. Changes (mutations) in these genes can produce a new trait in offspring. If a new trait makes these offspring better suited to their environment, they will be more successful at surviving and reproducing. This process is called natural selection and it causes useful traits to become more common. Over many generations a population can acquire so many new traits that it becomes a new species.

Free Market Ecology

This theory states that through the constant flexibility and adaptiveness of its devices - such as the price system - the free market is the best solution to overcome the environmental crisis. Free market ecologists, supported by a biased reading of Garrett Hardin's works, propose the privatization of common goods such as land, water and air to solve the alleged inefficiency of common property.

General Systems Theory

Systems theory is the interdisciplinary study of complex systems in nature, society and science. It is a framework with which one can analyze and/or describe any group of objects that work in concert: a single organism, any organization or society, or any electro-mechanical or informational artifact. Systems theory originated in biology in the 1920s from the need to explain the interrelatedness of organisms in ecosystems. As a technical and general academic area of study it predominantly refers to the science of systems that resulted from Bertalanffy's General System Theory (GST), among others, in initiating what became a project of systems research and practice. It was Margaret Mead and Gregory Bateson who developed interdisciplinary perspectives in systems theory (such as positive and negative feedback in the social sciences).

Global warming conspiracy theory

Supporters of this theory claim that the theory of global warming is a fraud, perpetuated for financial, ideological or world domination purposes.

Global Warming Denialism

This theory describes efforts to counter all or part of the theory of global climate change when those involved are believed to be acting out of vested interests rather than an unbiased evaluation of the scientific data. While the term 'climate skeptic' generally refers to scientists taking good faith positions on the global warming controversy, 'climate change denial' usually refers to disinformation campaigns, particularly by groups with ties to the energy lobby.

Libertarian Transhumanism

Libertarian transhumanists advocate the 'right to human enhancement' in a free market society.

Luddism

Social movement of British textile artisans in the early nineteenth century who protested - often by destroying mechanized looms - against the changes produced by the Industrial Revolution which they felt threatened their livelihood. For a short time the Luddite movement was so strong that it clashed in battles with the British Army.

Malthusianism

English economist Thomas Malthus expressed views on the potential for populations to increase rapidly and often faster than the food supply available to them. This scenario, outlined in his treatise *An Essay on the Principle of Population*, is known as a Malthusian catastrophe. Malthusian classical theories continue to inspire researchers today (see Neo-Malthusianism).

Mechanicism

This theory offers the interpretation of phenomena through mechanical models and the belief that reality can be reduced to cause-effect patterns. It has its origin in the application of the scientific method of physics to 'weaker' sciences, such as the human sciences, politics and sociology. Even if the mechanicistic, cause-effect model has been superseded in most fields by Ecology, Cybernetics or Systems Theory, it is still influential in the culture of Western societies.

Millenarianism

Millenarianism is the belief by a religious, social or political group or movement in a coming major transformation of society after which all things will be changed in a positive (or sometimes negative or ambiguous) direction. Millennialism is a specific form of Millenarianism based

on a one thousand year cycle and this form is especially significant within Christianity. Millenarian groups typically claim that society and its rulers are corrupt, unjust or otherwise wrong. They therefore believe they will be destroyed soon by a powerful force. The harmful nature of the status quo is always considered intractable without the anticipated dramatic change.

Neo-eugenics

A pseudo-scientific medical discipline aiming at improving the human species through breeding and DNA manipulation techniques.

Neo-Luddism

Neo-Luddism is a modern movement of opposition to specific or general technological developments. Few people describe themselves as neo-Luddites (though it is common, certainly in the UK, for people to self-deprecatingly describe themselves as Luddites if they dislike or have difficulty using modern technology); the term 'neo-Luddite' is most often deployed by advocates of technology to describe persons or organizations that resist technological advances.

Neo-malthusianism

Neo-Malthusianism is a set of doctrines derived from Thomas Malthus's theory that limited resources keep populations in check and reduce economic growth. A current proponent of Neo-Malthusianism is the Club of Rome. In their book, *Limits to Growth*, they used innovative computer modeling to predict a crisis of resources, food per capita and general resources in the mid-21st century. After a time human populations would no longer be able to sustain themselves.

Neo-millenarianism

As periods of crisis emerge, millenarian fears rise (see Millenarianism). So we can expect a new millenarian tide for the next future.

Neo-nazism

Nazi-fascist revivals for the new millennium.

New Ageism

New Age (New Age Movement and New Age Spirituality) is a decentralized Western social and spiritual movement that seeks Universal Truth and the attainment of the highest individual human potential. It combines aspects of cosmology, astrology, esotericism, complementary and alternative medicine, various religious practices, collectivism, nature, and environmentalism. New Age Spirituality is characterized by an individual approach to spirituality, while rejecting religious doctrine and dogma.

Non-anthropocentrism

A branch of philosophical thought questioning the western tradition of considering man at the center of the universe, nature, etc.

Permaculture

The word 'permaculture' was coined in 1978 by ecologist Bill Mollison and one of his students David Holmgren. It is a contraction of 'permanent agriculture' or 'permanent culture'

Permaculture is about designing ecological human habitats and food production systems. It is a land use and community building movement which strives for the harmonious integration of human dwellings, microclimate, annual and perennial plants, animals, soils and water into stable, productive communities. The focus is on the relationships created among the elements by the way we place them in the landscape. This synergy is further enhanced by mimicking patterns found in nature.

Positivism

Positivism puts forward that the only authentic knowledge is knowledge based on actual sense experience. Such knowledge can only come from affirmation of theories through strict scientific method. Metaphysical speculation is avoided. Though the positivist approach can be traced back to

the beginnings of scientific method in Ibn al-Haytham's Book of Optics, the concept was first coined by Auguste Comte, widely considered the first modern sociologist, in the middle of the 19th century.

Post-structuralism

Post-structuralist philosophy states that language is not the expression of an immanent 'structure' of the world (as structuralist philosophy argued) but rather that language constructs the world's structures. For this reason, post-structuralists believe that no nature exists. What we call nature is a field of different contrasting forces of practices, power and desires. See also Anti-essentialism.

Romanticism

Romanticism is an artistic, literary and intellectual movement that originated in the second half of the 18th century in Western Europe and gained strength during the Industrial Revolution. It was partly a revolt against aristocratic the social and political norms of the Age of Enlightenment and a reaction to the scientific rationalization of nature. It was embodied most strongly in the visual arts, music and literature. The movement stressed strong emotion as a source of aesthetic experience, ennobled folk art and custom, and argued for a 'natural' epistemology of human activities as conditioned by nature in the form of language, custom and usage.

Stationary State Economics

Economical theories advocating the option of an economy of stability and zero-growth.

Sustainable Developmentalism

First formalized in the Bruntland Report ('Our common future', 1987), those who believe in Sustainable Development put forward that is possible to amend the negative environmental side-effects of capitalistic economic development, satisfying present needs without compromising the needs of future generations.

Techno-utopism

A techno-utopist imagines various future scenarios based on hypothetical technological innovations, believing that those technologies will solve all human problems, including environmental issues.

Territorialism

Starting from a critique of sustainable development, Territorialists focus on the increasingly important role of local qualitative development and develop the concept of 'local self-sustainable development'.

This concept emphasizes the balance between directing development toward fundamental human requirements (which cannot be reduced to material needs alone), self-reliance and the development of self-government by local society, and enhancing environmental quality. These three objectives are combined according priority to 'place-consciousness', a reflexive relation with local identity and heritage (with reference to the themes of Bio-regionalism dealt with by Patrick Geddes). The definition of 'heritage' adopted by this school is extensive, identifying each 'territory' both with its people and places, and including environment, landscape, urban features, local knowledge, insurgent practices, culture and crafts in its unique character as a living entity.

Thermodynamics

In physics, thermodynamics is the study of the conversion of heat energy into different forms of energy (in particular, mechanical, chemical, and electrical energy); different energy conversions into heat energy; and its relation to macroscopic variables such as temperature, pressure, and volume. Some of the laws of thermodynamics, especially the Second (the Entropy law) were at the basis of the work of ecological economists, such as Nicholas Georgescu-Roegen and Jeremy Rifkin.

Transpersonal Ecology

Studies the transcendental and spiritual aspect of the relationship between man and the environment.

Vernacular Architecture

Architectural movement which believes the best environmental solutions are those inherited from the past from traditional communities Vernacular architects are led either by Anarco-primitivism or by localist protectionist reactionary ideologies.

Welfare Economics

Welfare economics uses microeconomic techniques to simultaneously determine allocative efficiency within an economy and the income distribution associated with it. It analyzes social welfare, however measured, in terms of economic activities of the individuals that comprise the theoretical society considered. The work of Pigou stresses the distinction between private and social marginal products and costs. He put forward that via a mixture of taxes and subsidies governments can correct such perceived market failures - or 'internalize the externalities'. Pigovian taxes - taxes used to correct negative externalities - are named in his honor Environmental damages of industrial activities are a particular type of negative externality.

Part III

Fiction

12 Monkeys (Terry Gilliam, USA, 1995, 129 min)

In a future world devastated by disease, a convict is sent back in time to gather information about the man-made virus that wiped out most of the human population on the planet.

Armageddon (Michael Bay, USA, 1998, 150 min)

When an asteroid the size of Texas is headed for Earth the world's best deep core drilling team is sent to nuke the rock from the inside.

Bioshock (Ken Levine, Video Game, 2008)

Set in an alternate history 1960, this videogame places the player in the role of a plane crash survivor named Jack, who must explore the underwater dystopian city of Rapture, and survive attacks by the mutated beings and mechanical drones that populate it. The game incorporates elements found in role-playing and survival horror games.

The Birds (Alfred Hitchcock, USA, 1963, 119 min)

A wealthy San Francisco playgirl pursues a potential boyfriend to a small Northern California town that slowly takes a turn for the bizarre when birds of all kinds suddenly begin to attack people there in increasing numbers and with increasing viciousness.

Blade Runner (Ridley Scott, USA, 1982, 117 min)

Deckard, a blade runner (Harrison Ford), has to track down and terminate 4 replicants who hijacked a ship in space and have returned to earth seeking their maker.

Brave New World (Aldous Huxley, 1932)

Set in the London of AD 2540 (632 AF in the book), the novel anticipates developments in reproductive technology and sleep-learning that combine to change society.

Burn up (Omar Madha, UK-Canada, TV, 2008)

An oil industrialist, an environmental activist and a politician are in conflict in this drama set around a summit on climate change.

Cassandra Crossing (George P Cosmatos, USA, 1976, 129 min)

Passengers on a European train have been exposed to a deadly disease. Nobody will let them off the train so what happens next?

La Città del Sole (Tommaso Campanella, 1602)

The City of the Sun (Italian: La città del Sole; Latin: Civitas Solis) is a philosophical work by the Italian Dominican philosopher Tommaso Campanella. It is an important early utopian work.

Conan, the Boy in Future (Mirai shonen Konan, Hayao Miyazaki, TV Series, Animation, 1978)

A boy and his friends fight for the future of the world.

The Day After Tomorrow (Roland Emmerich, USA, 2004, 124 min)

A climatologist tries to figure out a way to save the world from abrupt global warming. He must get to his young son in New York, which is being taken over by a new ice age.

Deschooling Society (Ivan Illich, 1971)

Deschooling Society (1971) was the book that brought Ivan Illich to public attention. It is a critical discourse on education as practised in "modern" economies. Full of detail on then-current programs and concerns, the book's core assertions and propositions remain as radical today as they were at the time.

Dialogo sopra i due massimi sistemi del mondo (Galileo Galilei, 1632)

The Dialogue Concerning the Two Chief World Systems (Dialogo sopra i due massimi sistemi del mondo) was a 1632 book by Galileo, comparing the Copernican system with the traditional Ptolemaic system.

Doktor Faustus (Thomas Mann, 1947)

Doctor Faustus (in German, Doktor Faustus) is a German novel written in the United States by Thomas Mann, begun in 1943 and published in 1947 as *Doktor Faustus Das Leben des deutschen Tonsetzers Adrian Leverkühn, erzählt von einem Freunde* ("Doctor Faustus The Life of the German composer Adrian Leverkühn, told by a friend").

Dune (David Lynch, USA-Italy, 1984, 147 min)

In the distant future, a man appears who may be the prophet that a long-suffering galaxy has been waiting for.

Ecotopia: The Notebooks and Reports of William Weston (Ernest Callenbach, 1975)

Ecotopia: The Notebooks and Reports of William Weston is the title of a seminal book by Ernest Callenbach, published in 1975. The society described in the book is one of the first ecological utopias and was influential on the counterculture, and the green movement in the 1970s and after.

Edge of Darkness (UK, TV series, 1985)

The mysterious death of his activist daughter, leads her straight-laced father, an Inspector of the local police force, through a haunting revelation of the murkiness of the British Nuclear Policy of the eighties.

Eleventh Hour (Stephen Gallagher, UK, TV series, 2006)

Eleventh Hour is a four part British television series developed by Granada Television for ITV by writer Stephen Gallagher. It follows the adventures of Professor Ian Hood (played by Patrick Stewart), Special Advisor to the government's Joint Sciences Committee, who troubleshoots threats stemming from or targeting "scientific endeavour". He is joined by Rachel Young (played by Ashley Jensen), a Special Branch operative who acts primarily as his bodyguard, as Hood has made powerful enemies through his work. Each episode is 90 minutes long. The first episode was broadcast on 19 January 2006.

Emile, ou de l'Education (Jean-Jacques Rousseau, 1762)

Emile: or, On Education (1762) which Jean-Jacques Rousseau believed to be the "best and most important of all my writings" is largely a philosophical treatise on the nature of man; it addresses political and philosophical questions regarding the individual's relationship to society, in particular how the individual can retain what Rousseau saw as his natural goodness while participating in an inevitably corrupt society. In *Emile*, Rousseau attempts to describe a system of education that will enable the "natural man" that he outlines in *The Social Contract* (1762) to live within corrupt society.

Faust (Wolfgang Goethe, 1828)

Johann Wolfgang von Goethe's *Faust* is a tragic play. It was published in two parts: *Faust: der Tragödie erster Teil* (translated as: *Faust: The Tragedy Part One*) and *Faust: der Tragödie zweiter Teil* (*Faust: The Tragedy Part Two*). The play is a closet drama, meaning that it is meant to be read rather than performed. It is Goethe's most famous work and considered by many to be one of the greatest works of German literature.

Frankenstein, or The Modern Prometheus (Mary Shelley, 1818)

Frankenstein; or, The Modern Prometheus, generally known as *Frankenstein*, is a novel written by the British author Mary Shelley. Shelley started writing the novel when she was 18 and finished when she was 19. The first edition was published anonymously in London in 1818. Shelley's name appears on the revised third edition, published in 1831. The title of the novel refers to a scientist, Victor Frankenstein, who learns how to create life and creates a being in the likeness of man, but larger than average and more powerful.

Frankenstein (James Whale, USA, 1931, 71 min)

Horror classic in which an obsessed scientist assembles a living being (Boris Karloff) from parts of exhumed corpses.

Free Karma Food (Wu Ming 5, 2006)

In 2025, after a catastrophic disease which led all species of cattle to extinguish, consumption economy found a new way for nurturing itself. A new, precious delicacy started to appear on upper-class kitchen tables. John Smith Jones is the best in his job: hunter in Central New York City, alpha-male of a new predator race. John Smith Jones is the best in his job: when he makes a mistake it's a major one. The only one a meat-killer can't afford to make.

La Ginestra, o Il Fiore del Deserto (Giacomo Leopardi, 1836)

In 1836, Leopardi wrote his moral testament as a poet, *La Ginestra*, also known as *Il Fiore del Deserto* ("The flower of the desert"). It is the longest of all the cantos and has an unusual beginning. In fact, among all the Leopardian cantos only this one begins with a scene of desolation, to be followed by an alternation between the enchantment of the panorama and of the starry night sky. Leopardi, after having described the nothingness of the world and of man with respect to the universe; after having

lamented the precariousness of the human condition threatened by the capriciousness of nature, not as exceptional evils but as continuous and constant; and after having satirized the arrogance and the credulity of man, who propounds ideas of progress and hopes, even while knowing he is mortal, to render himself eternal, concluded with the observation that reciprocal solidarity is the only defence against the common enemy which is nature.

Mars Trilogy (Kim Stanley Robinson. Includes Red Mars, 1992; Green Mars, 1994; Blue Mars, 1996)

The Mars trilogy is a series of award-winning science fiction novels by Kim Stanley Robinson, chronicling the settlement and terraforming of the planet Mars through the intensely personal and detailed viewpoints of a wide variety of characters spanning almost two centuries. Ultimately more utopian than dystopian, the story focuses on egalitarian, sociological, and scientific advances made on Mars, while Earth suffers from overpopulation and ecological disaster. The three novels are Red Mars (1992), Green Mars (1993) and Blue Mars (1996). An additional collection of short stories and background information was published as *The Martians* (1999). The main trilogy won a number of prestigious awards.

Mary Shelley's Frankenstein (Kenneth Branagh, UK-Japan-USA, 1995, 123 min)

When Victor Frankenstein rejects the artificial man he just created, the monster escapes and later swears revenge.

Mr Palomar (Palomar, Italo Calvino, 1982)

Mr Palomar is the title of William Weaver's English translation of Italo Calvino's novel *Palomar* (first published 1983; English translation 1985). In 27 short sections, arranged in a 3 x 3 x 3 pattern, the title character makes philosophical observations about the world around him. Calvino shows us a man on a quest to quantify complex phenomena in a search

for fundamental truths on the nature of being. The first section is concerned chiefly with visual experience; the second with anthropological and cultural themes; the third with speculations about larger questions such as the cosmos, time, and infinity. This thematic triad is mirrored in the three subsections of each section, and the three sections in each subsection.

Gattaca (Andrew Niccol, USA, 1997, 106 min)

A genetically inferior man assumes the identity of a superior one in order to pursue his lifelong dream of space travel.

Godzilla (Gojira, Ishiro Honda, Japan, 1950, 98 min)

American nuclear weapons testing results in the creation of a seemingly unstoppable, dinosaur-like beast.

Godzilla (Roland Emmerich, USA-Japan, 1998, 139 min)

French nuclear tests in the Pacific results in the creation of an enormous lizard-like creature, facing north to threaten New York City.

Golem: wie er in die Welt kam, Der (Paul Wegener, Germany, 1920, 85 min)

In 16th-century Prague, a Jewish rabbi creates a giant creature from clay, called the Golem, and using sorcery, brings the creature to life in order to protect the Jews of Prague from persecution. Unfortunately, his evil assistant manages to take control of the Golem, and uses it to commit crimes to enrich him, and finally has it kidnap the rabbi's beautiful daughter. However, the Golem - which had been given human emotions by the rabbi - finally rebels against the assistant's misuse of him.

The Hitchhiker's Guide to the Galaxy (Douglas Adams, Radio Comedy, 1978)

The *Hitchhiker's Guide to the Galaxy* is a science fiction comedy series created by Douglas Adams. Originally a radio comedy broadcast on BBC Radio 4 in 1978, it was later adapted to other formats, and over several years it gradually became an international multi-media phenomenon.

I Am Legend (Richard Matheson, 1954)

I Am Legend is a 1954 science fiction novel by Richard Matheson about the last man alive in a future Los Angeles, California. It is notable as influential on the developing modern vampire genre as well as the zombie genre, in popularizing the fictional concept of a worldwide apocalypse due to disease, and in exploring the notion of vampirism as a disease. The novel was a success and was adapted to film as *The Last Man on Earth* in 1964, as *The Omega Man* in 1971, and again in 2007 as *I Am Legend*.

I Am Legend (Francis Lawrence, USA, 2007, 101 min)

Years after a plague kills most of humanity and transforms the rest into monsters, the sole survivor in New York City struggles valiantly to find a cure.

Jurassic Park (Michael Crichton, 1990)

Jurassic Park is a science fiction novel that was written by Michael Crichton and published in 1990. Often considered a cautionary tale on unconsidered biological tinkering in the same spirit as Mary Shelley's *Frankenstein*, it uses the mathematical concept of chaos theory and its philosophical implications to explain the collapse of an amusement park showcasing certain genetically recreated dinosaur species. It was adapted into a blockbuster film in 1993 by director Steven Spielberg.

King Kong (Merian C. Cooper and Ernest B. Schoedsack, USA, 1933, 100 min)

A film crew goes to a tropical island for an exotic location shoot and discovers a colossal giant gorilla who takes a shine to their female blonde star

Kleine Johannes, De (Frederik van Eeden, 1885)

De Kleine Johannes ("Little John") is was a fantastical adventure of an everyman who grows up to face the harsh realities of the world around him and the emptiness of hopes for a better afterlife, but ultimately finding meaning in serving the good of those around him. This ethic is memorialized in the line "Waar de mensheid is, en haar weedom, daar is mijn weg" ("Where mankind is, and her woe, there is my path").

The New Atlantis (Francis Bacon, 1627)

In 1623 Sir Francis Bacon expressed his aspirations and ideals in *The New Atlantis*. Released in 1627, this utopian novel was his creation of an ideal land where "generosity and enlightenment, dignity and splendor, piety and public spirit" were the commonly held qualities of the inhabitants of Bensalem. In this work, he portrayed a vision of the future of human discovery and knowledge. The plan and organization of his ideal college, "Solomon's House", envisioned the modern research university in both applied and pure science.

The Tragical History of Doctor Faustus (Christopher Marlowe, 1604)

The Tragical History of Doctor Faustus is a play by Christopher Marlowe, based on the Faust story, in which a man sells his soul to the devil for power and knowledge. Doctor Faustus was first published in 1604, eleven years after Marlowe's death and at least twelve years after the first performance of the play.

Panic in the Streets (Elia Kazan, USA, 1950, 96 min)

A doctor and a policeman in New Orleans have only 48 hours to locate a killer infected with bubonic plague.

The Perfect Storm (Wolfgang Petersen, USA - Germany, 2000, 130 min)

An unusually intense storm pattern catches some commercial fishermen unaware and puts them in mortal danger.

Petite cosmogonie portative (Raymond Queneau, 1950)

Encyclopaedical poem by French writer Raymond Quenau.

Planet of the Apes (Franklin J Schaffner, USA, 1968, 112 min)

An astronaut crew crash lands on a planet in the distant future where intelligent talking apes are the dominant species, and humans are the oppressed and enslaved.

La Possibilité d'une Ile (Michel Houellebecq, 2005)

The Possibility of an Island (French: La Possibilité d'une Île) is a 2005 novel by controversial French novelist Michel Houellebecq, set within the ambiance of a cloning cult that resembles the real-world Raélians.

Resident Evil (aka Biohazard, Video Game, 1996)

Resident Evil (known in Japan as Biohazard, Baiohazado) is a survival horror video game series and media franchise consisting of comic books,

novelizations, three films, and a variety of collectibles, including action figures, strategy guides and publications.

Robinson Crusoe (Daniel Defoe, 1719)

The Life and Strange Surprising Adventures of Robinson Crusoe (of York, Mariner: Who lived Eight and Twenty Years all alone in an un-inhabited Island on the Coast of America, near the Mouth of the Great River of Oroonoque; Having been cast on Shore by Shipwreck, where in all the Men perished but Himself With An Account how he was at last as strangely deliver'd by Pyrates) is a novel by Daniel Defoe, first published in 1719 and sometimes regarded as the first novel in English. The book is a fictional autobiography of the title character, an English castaway who spends 28 years on a remote tropical island near Venezuela, encountering Native Americans, captives, and mutineers before being rescued. This device, presenting an account of supposedly factual events, is known as a "false document" and gives a realistic frame story.

San Francisco, USA, 1936, 115 min

San Francisco is a 1936 drama-adventure film directed by Woody Van Dyke, based on the April 18, 1906. San Francisco earthquake.

Der Schwarm (Frank Schätzing, 2004)

The Swarm (original German title: *Der Schwarm*) is a techno-thriller novel by German author Frank Schätzing. It was first published in Germany and Austria in 2004 and soon became a bestseller.

Sim Earth (Will Wright, Computer Game, 1990)

SimEarth: The Living Planet is a life simulation computer game designed by Will Wright and published in 1990 by Maxis, in which the player controls the development of an entire planet. Although the game was much admired when it was released, it was not a big seller compared to its hit predecessor *SimCity*.

Solaris (Solyaris, Andrei Tarkovsky, USSR, 1972, 165 min)

The Solaris mission has established a base on a planet that appears to host some kind of intelligence, but the details are hazy and very secret. After the mysterious demise of one of the three scientists on the base, the main character is sent out to replace him. He finds the station run-down and the two remaining scientists cold and secretive. When he also encounters his wife who has been dead for seven years, he begins to appreciate the baffling nature of the alien intelligence.

Soylent Green (Richard Fleischer, USA, 1973, 97 min)

In an overpopulated futuristic Earth, a New York police detective finds himself marked for murder by government agents when he gets too close to a bizarre state secret involving the origins of a revolutionary and needed new foodstuff.

Stalker (Andrei Tarkovsky, USSR, 1976, 163 min)

Near a gray and unnamed city is the Zone, an alien place guarded by barbed wire and soldiers. Over his wife's numerous objections, a man rises in the dead of night: he's a stalker, one of a handful who have the mental gifts (and who risk imprisonment) to lead people into the Zone to the Room, a place where one's secret hopes come true. That night, he takes two people into the Zone: a popular writer who is burned out, cynical, and questioning his genius; and a quiet scientist more concerned about his knapsack than the journey. In the deserted Zone, the approach to the Room must be indirect. As they draw near, the rules seem to change and the stalker faces a crisis.

State of Fear (Michael Crichton, 2004)

State of Fear is a 2004 "message" novel by Michael Crichton published by HarperCollins on December 7, 2004. Like most of his novels it is a techno-thriller, this time concerning eco-terrorists who attempt mass murder to

support their views. The book contains many graphs and footnotes, two appendices, and a twenty page bibliography, all combining to give an actual or fictional impression of scientific authority.

Utopia (Tomas More, 1516)

De Optimo Republicae Statu deque Nova Insula Utopia (translated *On the Best State of a Republic and on the New Island of Utopia*) or more simply *Utopia* is a 1516 book by Sir (Saint) Thomas More. The book, written in Latin, is a frame narrative primarily depicting a fictional island society and its religious, social and political customs.

Vingt mille lieues sous les mers (Jules Verne, 1870)

Twenty Thousand Leagues Under the Sea (French: *Vingt mille lieues sous les mers*) is a classic science fiction novel by French writer Jules Verne, published in 1870. It is about the fictional Captain Nemo and his submarine, Nautilus, as seen by one of his passengers, Professor Pierre Aronnax.

Voyage au centre de la Terre (Jules Verne, 1864)

A Journey to the Centre of the Earth (French: *Voyage au centre de la Terre*), also translated as *A Journey to the Interior of the Earth*, is a classic 1864 science fiction novel by Jules Verne. The story involves a professor who leads his nephew and hired guide down a volcano in Iceland to the "centre of the Earth". They encounter many adventures, including prehistoric animals and natural hazards, eventually coming to the surface again in southern Italy.

Walden, or Life in the Woods (Henry David Thoreau, 1854)

Walden (first published as *Walden; or, Life in the Woods*) by Henry David Thoreau is one of the best-known non-fiction books written by an American. Published in 1854. It details Thoreau's sojourn in a cabin near Walden Pond, amidst woodland owned by his friend and mentor Ralph Waldo Emerson, near Concord, Massachusetts. Thoreau lived at Walden for two

years, two months, and two days, but *Walden* was written so that the stay appears to be a year, with expressed seasonal divisions. Thoreau did not intend to live as a hermit, for he received visitors and returned their visits. Instead, he hoped to isolate himself from society in order to gain a more objective understanding of it. Simplicity and self-reliance were Thoreau's other goals, and the whole project was inspired by transcendentalist philosophy, which was one of the basis's for the Enlightenment Period.

Wall-E (Andrew Stanton, USA, 2008, 98 min)

In the distant future, a small waste collecting robot inadvertently embarks on a space journey that will ultimately decide the fate of mankind.

The Wanting Seed (Anthony Burgess, 1962)

The Wanting Seed is a dystopian novel by the English author Anthony Burgess, written in 1962. Although the novel addresses many societal issues, the primary subject is overpopulation and its relation to culture. Religion, government, and history are also addressed. A healthy portion of the book is a condemnation of war.

Waterworld (Kevin Reynolds, USA, 1995, 136 min)

In a future where the polar ice caps have melted and most of Earth is underwater, a mutated mariner fights starvation and outlaw "smokers," and reluctantly helps a woman and a young girl find dry land.

Wilhelm Meisters Lehrjahre (Wolfgang Goethe, 1795)

Wilhelm Meister's Apprenticeship (German: *Wilhelm Meisters Lehrjahre*) is the second novel by Johann Wolfgang Goethe, published in 1795-96. While his first novel, *The Sorrows of Young Werther*, featured a hero driven to suicide by despair, the eponymous hero of this novel undergoes a journey of self-realization. The story centers upon Wilhelm's attempt to escape what he views as the empty life of a bourgeois businessman. After a

failed romance with the theater, Wilhelm commits himself to the mysterious Tower Society comprised of enlightened aristocrats who will guide him towards his true calling.

Zodiac (Neal Stephenson, 1988)

Zodiac: An Eco-Thriller (1988) is Neal Stephenson's second novel, which tells the story of an environmentalist, Sangamon Taylor, uncovering a conspiracy involving industrialist polluters and Satanists in Boston Harbor. The "Zodiac" of the title refers to the brand of inflatable motor boats the hero uses to get around the city efficiently. His opponents attempt to frame him as an ecoterrorist.

Part IV

People, Events and Organizations

2005 World Summit

The 2005 World Summit, 14-16 September 2005, was a follow-up summit meeting to the United Nations' 2000 Millennium Summit, which led to the Millennium Declaration of the Millennium Development Goals (MDGs). Representatives (including many leaders) of the 191 (now 192) member states met in New York City for what the United Nations described as "a once-in-a-generation opportunity to take bold decisions in the areas of development, security, human rights and reform of the United Nations".

Theodor Adorno

Theodor Ludwig Wiesengrund Adorno (September 11, 1903 - August 6, 1969) was a German-born international philosopher. Together with Max Horkheimer he was a member of the Frankfurt School.

Georg Agricola

Georgius Agricola (March 24, 1494 - November 21, 1555) was a German scholar and scientist. In his most famous book, *De Re Metallica*, he was the first to introduce the term "sustainability" (Nachhaltigkeit) in the exploitation of metal mines.

Christopher Alexander

Christopher Alexander (born October 4, 1936 in Vienna, Austria) is an architect. He is widely recognized as the father of the pattern language movement in computer science and architecture. Reasoning that users know more about the buildings they need than any architect could, and that past traditional practices may inform current practice, he produced and "pattern language" designed to empower any human being to design and build at any scale. Influential books include: *Notes on the Synthesis of Form* (1964), *A Pattern Language* (1977) and *The Timeless Way of Building* (1979).

Hannah Arendt

“Hannah Arendt’s very short history of capitalism: starts with expropriation and creation of proletariat; then moves on to rape of nature” (Aetzel Griffioen).

Arup

Arup is a professional services firm providing engineering, design, planning, project management and consulting services for all aspects of the built environment, originally founded by the Danish engineer Ove Arup (1895-1985), who propagated an interdisciplinary, integral approach to design and engineering. The firm is present in the Americas, Australasia, East Asia, Europe and Middle East, and now has over 10,000 staff based in 92 offices in 37 countries. Arup developed the SPeAR appraisal tool (Sustainable Project Appraisal Routine), which assesses the sustainability of a project through different environmental, social, natural resources and economic indicators.

Francis Bacon

Francis Bacon, 1st Viscount St Alban KC QC (22 January 1561 - 9 April 1626) was an English philosopher, statesman, and author. He served both as Attorney General and Lord Chancellor of England. He is also known as a catalyst of the scientific revolution. His most celebrated works included his *The New Atlantis*.

Rudolph Bahro

Rudolf Bahro (18 November 1935 - 5 December 1997) was a German philosopher and politician. His book *Die Alternative Zur Kritik des real existierenden Sozialismus* is considered one of the first examples of eco-socialist theories.

Ronald Bailey

Ronald Bailey (born November 23, 1953) is the science editor for Reason magazine, a climate change denier and a libertarian transhumanist.

Wendell Barry

Wendell Berry (born August 5, 1934, Henry County, Kentucky) is an American man of letters, academic, cultural and economic critic, and farmer. He is a prolific author of novels, short stories, poems, and essays. His nonfiction serves as an extended conversation about the life he values. According to Berry, the good life includes sustainable agriculture, appropriate technologies, healthy rural communities, connection to place, the pleasures of good food, husbandry, good work, local economics, the miracle of life, fidelity, frugality, reverence, and the interconnectedness of life. The threats Berry finds to this good life include: industrial farming and the industrialization of life, ignorance, hubris, greed, violence against others and against the natural world, the eroding topsoil in the United States, global economics, and environmental destruction.

Gregory Bateson

Gregory Bateson (9 May 1904 - 4 July 1980) was a British anthropologist, social scientist, linguist, semiotician and cyberneticist whose work intersected that of many other fields.

In his book *Towards an Ecology of Mind* he poses the basis of a new kind of holistic epistemology, based on systems theory, proposing the abolishment of the division of mind and nature disciplines.

Peter Berg

Together with Raymond Dasmann, is considered the initiator of the Bioregionalist movement.

Ludwig von Bertalanffy

Karl Ludwig von Bertalanffy (September 19, 1901, Vienna, Austria - June 12, 1972, New York, USA) was an Austrian-born biologist known as one of the founders of general systems theory.

Stefano Boeri

Architect and writer, he proposes a non-anthropocentric ethic towards urban planning.

Alexandr Bogdanov

Alexandr Aleksandrovich Bogdanov (22 August 1873, Hrodna, Russian Empire (now Belarus) -7 April 1928, Moscow) was a Russian physician, philosopher, economist, science fiction writer, and revolutionary of Belarusian ethnicity whose scientific interests ranged from the universal systems theory to the possibility of human rejuvenation through blood transfusion.

Bogdanov's original proposition - Tectology - consisted of unifying all social, biological and physical sciences, by considering them as systems of relationships, and by seeking the organizational principles that underly all systems His work "Tektology: Universal Organization Science", finished by the early 1920s, anticipated many of the ideas that were popularized later by Norbert Wiener in Cybernetics and Ludwig von Bertalanffy in the General Systems Theory. There are suggestions that both Wiener and von Bertalanffy might have read the German translation of Tektology which was published in 1928. In Russia, Lenin (and later Stalin) considered Bogdanov's natural philosophy an ideological threat to the dialectic materialism and put tectology to sleep. The rediscovery of Bogdanov's tectology occurred only in 1970s.

Murray Bookchin

Murray Bookchin (January 14, 1921 - July 30, 2006) was an American libertarian socialist, political and social philosopher, speaker and writer. For much of his life he called himself an anarchist. Founder of the social ecology movement within libertarian socialist and ecological thought, Bookchin is noted for his synthesis of the libertarian socialist tradition with modern ecological awareness He was the author of two dozen books on politics, philosophy, history, and urban affairs as well as ecology Bookchin was a radical anti-capitalist and vocal advocate of the decentralisation of society. His writings on libertarian municipalism, a theory of face-to-face, grassroots democracy, had an influence on the Green Movement and anti-capitalist direct action groups such as Reclaim the Streets.

He was a staunch critic of biocentric philosophies such as deep ecology and the biologically deterministic beliefs of sociobiology, and his criticisms of "new age" Greens such as Charlene Spretnak contributed to the divisions that affected the American Green movement in the 1990s.

Kenneth Boulding

Kenneth Ewart Boulding (January 18, 1910-March 18, 1993) was an economist, educator, peace activist, poet, religious mystic, devoted Quaker, systems scientist, and interdisciplinary philosopher. He was cofounder of General Systems Theory and founder of numerous ongoing intellectual projects in economics and social science.

Steward Brand

Stewart Brand (born December 14, 1938 in Rockford, Illinois) is one of the main figures of the counterculture movement of the sixties. He is an author, editor, and creator of *The Whole Earth Catalog* and *CoEvolution Quarterly*. *The Whole Earth Catalog* (a compendium of tools, texts and information) sought to "catalyze the emergence of a realm of personal power" by making soft technology available to people eager to create sustainable communities. In 1985 he was co-creator of the WELL, one of the earliest online communities. Another influential book is *How Buildings Learn: What Happens After They're Built* (1994) on the evolution of buildings and how buildings adapt to changing requirements over long periods.

Michael Braungart

Michael Braungart is a German chemist who advocates that humans can have a positive ecological footprint by redesigning systems which support life. A former Greenpeace activist who once lived in a tree as protest, he is now a professor of process engineering. Together with William McDonough he wrote in 2002 *"Cradle to Cradle"*. Their main point is that we can be "wasteful" if the products we produce go completely back into nature or are completely reborn as new products. Using a cherry tree as an example, they note how "wasteful" it is. Each year it dumps a great pile of fruit and leaves on the ground to rot. But all of this waste goes back

into nature to be reborn as new trees, bacteria, birds and other parts of the natural ecosystem. According to the authors, we should try to emulate this natural system instead of trying to do more with less.

Brundtland Commission

The Brundtland Commission, formally the World Commission on Environment and Development (WCED), known by the name of its Chair Gro Harlem Brundtland, was convened by the United Nations in 1983. The commission was created to address growing concern "about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development". In establishing the commission, the UN General Assembly recognized that environmental problems were global in nature and determined that it was in the common interest of all nations to establish policies for sustainable development.

Richard Buckminster Fuller

Richard Buckminster "Bucky" Fuller (July 12, 1895 - July 1, 1983) was an American architect, author, designer, futurist, inventor, and visionary. Throughout his life, Fuller was concerned with the question "Does humanity have a chance to survive lastingly and successfully on planet Earth, and if so, how?". Considering himself an average individual without special monetary means or academic degree, he chose to devote his life to this question, trying to identify what he, as an individual, could do to improve humanity's condition, which large organizations, governments, and private enterprises inherently could not do. Pursuing this lifelong experiment, Fuller wrote more than thirty books, coining and popularizing terms such as "Spaceship Earth", ephemeralization, and synergetics. He also worked in the development of numerous inventions, chiefly in the fields of design and architecture, the best known of which is the geodesic dome. Carbon molecules known as fullerenes or buckyballs were named for their resemblance to geodesic spheres.

Paul Burkett

Paul Burkett is a Professor of Economics at University of Oregon and an Ecomarxist.

Peter Calthorpe

Architect and new Urbanist. Mr. Calthorpe's early published work includes technical papers, articles for popular magazines, and a number of seminal books, including *Sustainable Communities* with Sim Van der Ryn, and *The Pedestrian Pocket Book* with Doug Kelbaugh. *The Next American Metropolis: Ecology, Community, and the American Dream*, published in 1993, introduced the concept of Transit-Oriented Development (TOD) and provided extensive guidelines and illustrations of their broad application. His latest book with William Fulton, *The Regional City: Planning for the End of Sprawl*, explains how regional-scale planning and design can integrate urban revitalization and suburban renewal into a coherent vision of metropolitan growth.

Hans Carl von Carlowitz

Hans Carl von Carlowitz, (December 24, 1645 - March 3, 1714) was a German tax accountant and mining administrator His book *Sylvicultura oeconomica, oder hausswirthliche Nachricht und Naturmässige Anweisung zur wilden Baum-Zucht* (1713) was the first comprehensive treatise about forestry. He is considered to be the father of sustainable yield forestry.

Rachel Carson

Rachel Louise Carson (May 27, 1907 - April 14, 1964) was an American marine biologist and nature writer whose writings are credited with advancing the global environmental movement. In the late 1950s, Carson turned her attention to conservation and the environmental problems caused by synthetic pesticides. The result was *Silent Spring* (1962), which brought environmental concerns to an unprecedented portion of the American public. *Silent Spring* spurred a reversal in national pesticide policy-leading to a nationwide ban on DDT and other pesticides - and the

grassroots environmental movement it inspired the creation of the Environmental Protection Agency. Carson was posthumously awarded the Presidential Medal of Freedom.

Center for Bits and Atoms

The Center for Bits and Atoms was established in 2001 in the MIT Media Lab at the Massachusetts Institute of Technology. The cross-disciplinary center broadly looks at the intersection of information to its physical representation. MIT's Center for Bits and Atoms is an ambitious interdisciplinary initiative that is looking beyond the end of the Digital Revolution to ask how a functional description of a system can be embodied in, and abstracted from, a physical form. These simple, profound questions date back to the beginning of modern manufacturing and before that to the origins of natural science, but they have revolutionary new implications that follow from the recognition of the computational universality of physical systems. We can no longer afford to ignore nature's capabilities that have been neglected by conventional digital logic; it is at the boundary between the content of information and its physical representation that many of science's greatest technological, economic, and social opportunities and obstacles lie.

Charles, Prince of Wales

The Prince of Wales has frequently shared his views on architecture and urban planning in public forums, claiming to "care deeply about issues such as the environment, architecture, inner-city renewal, and the quality of life". He is known to be an advocate of neo-traditional ideas, such as those of Christopher Alexander and Leon Krier. Charles also published a book and created a documentary entitled *A Vision for Britain*, which critiqued some aspects of modern architecture. Despite criticism from the professional architectural press, the Prince has continued to put forward his views, stressing traditional urbanism, the need for human scale, and the restoration of historic buildings as an integrated element of new development and sustainable design. Two of the Charles' charities in particular forward his theories on design: The Prince's Regeneration Trust (formed by a merger of Regeneration Through Heritage and the Phoenix Trust in 2006) and The Prince's Foundation for the Built Environment (which absorbed The Prince of Wales's Institute of Architecture in 2001).

Further, the village of Poundbury was created at the instigation of Prince Charles, with a master plan by Krier.

Rudolph Clausius

Rudolf Julius Emanuel Clausius (January 2, 1822 - August 24, 1888), was a German physicist and mathematician and is considered one of the central founders of the science of thermodynamics. By his restatement of Sadi Carnot's principle known as the Carnot cycle, he put the theory of heat on a truer and sounder basis. His most important paper, *On the mechanical theory of heat*, published in 1850, first stated the basic ideas of the second law of thermodynamics. In 1865 he introduced the concept of Entropy.

Club of Rome

The Club of Rome is a global think tank that deals with a variety of international political issues. It was founded in April 1968 and raised considerable public attention 1972 with its report *Limits to Growth*. This book predicted that economic growth could not continue indefinitely because of the limited availability of natural resources, particularly oil.

Barry Commoner

Barry Commoner (born May 28, 1917) is an American biologist, college professor, and eco-socialist. His 1971 book, *The Closing Circle*, suggested a left-wing, eco-socialist response to the *limits to growth* (see Club of Rome) thesis, postulating that capitalist technologies were chiefly responsible for environmental degradation, as opposed to population pressures.

Auguste Comte

Auguste Comte (17 January 1798 - 5 September 1857) was a French thinker who is generally credited for having coined the term "sociologie", and initiated positivist philosophy.

Michael Crichton

John Michael Crichton, (born October 23, 1942) is an American author. His 2004 novel *State of Fear*, is about eco-terrorists who attempt mass murder to support their views. Also, this novel embraces the Global Warming Conspiracy Theory (see). Minor character Professor Norman Hoffman introduces the ideas that modern governments, media and fund raising organizations use fear to control the opinions of their citizenry and therefore earn votes, ratings and donations respectively. This idea is represented in the novel by the conspiracy to create artificial disasters and fabricate evidence supporting global warming.

James Cutler

Architect, renown for his environmental sensibility.

Herman Daly

Herman Daly (born 1938) is an American ecological economist and professor at the School of Public Policy of University of Maryland, College Park in the United States. He was Senior Economist in the Environment Department of the World Bank, where he helped to develop policy guidelines related to sustainable development. While there, he was engaged in environmental operations work in Latin America. Unlike his master, Nicholas Georgescu-Roegen (see), Daly advocates Steady-State economics (see Zero Growth).

Charles Darwin

Charles Robert Darwin (12 February 1809 - 19 April 1882) was an English naturalist, eminent as a collector and geologist, who proposed and provided scientific evidence that all species of life have evolved over time from common ancestors through the process he called natural selection. The fact that evolution occurs became accepted by the scientific community and the general public in his lifetime, while his theory of natural selection came to be widely seen as the primary explanation of the process of evolution in the 1930s, and now forms the basis of modern evolutionary theory. In modified form, Darwin's scientific discovery remains the

foundation of biology, as it provides a unifying logical explanation for the diversity of life.

Raymond Dasmann

Together with Peter Berg, is considered the initiator of the Bioregionalist movement.

Françoise d'Eaubonne

Françoise d'Eaubonne (March 12, 1920 in Paris - August 3, 2005 in Paris) was a French feminist, who introduced the term ecofeminism (écologie-féminisme, éco-féminisme or écoféminisme) in 1974.

Gilles Deleuze

Gilles Deleuze, (January 18, 1925 - November 4, 1995) was a French philosopher of the late 20th century. From the early 1960s until his death, Deleuze wrote many influential works on philosophy, literature, film, and fine art. His most popular books were the two volumes of *Capitalism and Schizophrenia: Anti-Oedipus* (1972) and *A Thousand Plateaus* (1980), both co-written with Félix Guattari. His books *Difference and Repetition* (1968) and *The Logic of Sense* (1969) led Michel Foucault to declare that "one day, perhaps, this century will be called Deleuzian". Deleuze has been regarded as one of the major thinkers of post-structuralism.

René Descartes

René Descartes (March 31, 1596 - February 11, 1650), also known as Renatus Cartesius (latinized form), was a highly influential French philosopher, mathematician, scientist, and writer. Descartes suggested that the body works like a machine, that it has the material properties of extension and motion, and that it follows the laws of physics. The mind (or soul), on the other hand, was described as a nonmaterial entity that lacks extension and motion, and does not follow the laws of physics. Descartes argued that only humans have minds, and that the mind interacts with the body at the pineal gland.

Savitri Devi

Savitri Devi (September 30, 1905, Lyon, France – October 22, 1982, Essex, England) was the pseudonym of the French writer Maximiani Portaz. She became enamoured with Hinduism and Nazism, trying to synthesise the two, and proclaiming Adolf Hitler an avatar of the Hindu god Vishnu. Her writings have influenced neo-Nazism and Nazi mysticism. Although mystical in her conception of Nazism, Savitri Devi saw Nazism as a practical faith without the requirement of metaphysics. Among Savitri Devi's ideas was the classifications of "men above time", "men in time" and "men against time". She is credited with pioneering neo-Nazi interest in occultism, Deep Ecology, and the New Age movement. Her works, in conjunction with those of Julius Evola, have been major influences on the Libertarian National Socialist Green Party.

Earth Day

Earth Day is one of two observances, both held annually during spring in the northern hemisphere, and autumn in the southern hemisphere. These are intended to inspire awareness of and appreciation for the Earth's environment. The United Nations celebrates an Earth Day each year on the March equinox, a tradition which was founded by peace activist John McConnell in 1969. A second Earth Day, which was founded by US Senator Gaylord Nelson as an environmental teach-in in 1970, is celebrated in many countries each year on April 22.

Constantinos A Doxiadis

Konstantinos Apostolos Doxiadis (often quoted as CA Doxiadis) (1913 - 28 June 1975), the father of Ekistics was a Greek architect and town planner of world wide influence and significance. At the peak of his career and influence, in the 1960s, he addressed the US Congress on the future of American cities, his portrait illustrated the front cover of Time Magazine, his company Doxiadis Associates was implementing many billion dollar projects in housing, urban and regional development in more than 40 countries, his Computer Centre (UNIVAC-DACC) was at the cutting edge of the computer technology of his time and at his annual "Delos Symposium" the World Society of Ekistics attracted the worlds foremost thinkers and experts.

Paul Ehrlich

Paul Ralph Ehrlich (born May 29, 1932 in Philadelphia, Pennsylvania) is a renowned entomologist specializing in Lepidoptera (butterflies). He is also well known as a researcher and author on the subject of human overpopulation, notably for his 1968 book *The Population Bomb*, and is Bing Professor of Population Studies in the department of Biological Sciences at Stanford University.

Albert Einstein

Albert Einstein (14 March 1879 - 18 April 1955) was a German-born theoretical physicist. He is best known for his theory of relativity and specifically mass-energy equivalence.

Jacques Ellul

Jacques Ellul (January 6, 1912-May 19, 1994) was a French philosopher, sociologist, theologian, and Christian anarchist. He wrote several books about the "technological society", and about Christianity and politics, such as *Anarchy and Christianity* (1991) - arguing that anarchism and Christianity are socially following the same goal. One of the most thoughtful philosophers to approach technology from a deterministic viewpoint, Ellul, professor at the University of Bordeaux, authored some 40 books and hundreds of articles over his lifetime, the dominant theme of which has been the threat to human freedom and Christian faith created by modern technology. His constant concern has been the emergence of a "technological tyranny" over humanity. As a philosopher and theologian, he further explored the religiosity of the technological society.

Ralph Waldo Emerson

Ralph Waldo Emerson (25 May 1803 - 27 April 1882) was an American essayist, philosopher, poet, and leader of the Transcendentalist movement in the early 19th century. His teachings directly influenced the growing New Thought movement of the mid 1800s. Emerson gradually moved away from the religious and social beliefs of his contemporaries, formulating and expressing the philosophy of Transcendentalism in his 1836 essay, *Nature*.

Arturo Escobar

Arturo Escobar V (born in Manizales, Colombia) is a Kenan Distinguished Professor in the Department of Anthropology at the University of North Carolina at Chapel Hill. His research interests are related to political ecology, the anthropology of development, social movements, Latin American development and politics. Escobar's research uses critical techniques in his provocative analysis of development discourse and practice in general. He also explores possibilities for alternative visions for a post-development era. He is a major figure in the post-development (see anti-developmentalism) academic discourse, a serious critic of development practices championed by western industrialized societies and a proponent of an anti-essentialist approach to political ecology.

Neil Evernden

Ecophenomenologist.

Julius Evola

Julius Evola, also known as Baron Giulio Cesare Evola, (May 19, 1898-June 11, 1974) was an Italian philosopher, esotericist, occultist, author, artist, poet, political activist, soldier and most significantly described as a Radical Traditionalist. Evola is primarily known for his involvement in Italian Fascist politics until the movement was defeated in World War II; since the war, his works have inspired a succession of New Right and neo-fascist groups in Italy and beyond.

Expo 2000

Universal Exhibition in Hannover, 2000, on the theme "Man, Nature, Technology".

Hassan Fathy

Hassan Fathy (1900 - 1989) was a noted Egyptian architect who pioneered appropriate technology for building in Egypt, especially by working to re-establish the use of mud brick (or adobe).

John Bellamy Foster

John Bellamy Foster (born August 19, 1953) is editor of the independent socialist magazine *Monthly Review* and professor of sociology at the University of Oregon in Eugene. His writings have focused on political economy, environmental sociology, and Marxist theory. In his book *Marx's Ecology: Materialism and Nature* (2000) he points out the relationship between marxism and ecologism.

Michel Foucault

Michel Foucault (15 October 1926 - 25 June 1984) was a French philosopher, historian, intellectual, critic and sociologist. He held a chair at the Collège de France with the title *History of Systems of Thought*, and also taught at the University of California, Berkeley. Though sometimes characterised as postmodernist, Foucault always rejected the post-structuralist and postmodernist labels.

Warwick Fox

Warwick Fox (born 1954) is an Australian philosopher and ethicist. He is the author of *Toward a Transpersonal Ecology* and *A Theory of General Ethics: Human Relationships, Nature, and the Built Environment*.

Saint Francis of Assisi

Saint Francis of Assisi (born Giovanni Francesco Bernardone) (1181 or 1182 - 3 October 1226) was a Roman Catholic friar and the founder of the Order of Friars Minor, more commonly known as the Franciscans.

Otto Frei

Frei Paul Otto (31 May 1925) is a German architect and structural engineer. He is the world's leading authority on lightweight tensile and membrane structures, and has pioneered advances in structural mathematics and civil engineering.

The French Group

Jean Baudrillard (July 29, 1929 - March 6, 2007) was a French cultural theorist, sociologist, philosopher, political commentator, and photographer. His work is frequently associated with postmodernism and post-structuralism. Together with Jean Aubert was the author of a polemic pamphlet (The Environmental Witch Hunt) addressed at the members of the 1970 International Design Conference in Aspen, Colorado (IDCA) on 'Environment and Design'. The pamphlet criticized the ideological nature behind the idea that technology or design could solve the environmental problems, claiming that "it is a question of social structures and social contradictions, not a question of illness or deficient metabolism, which could easily be cured".

Masanobu Fukuoka

Masanobu Fukuoka (Fukuoka Masanobu February 2, 1913 - August 16, 2008) author of *The One-Straw Revolution*, *The Road Back to Nature* and *The Natural Way Of Farming*, was one of the pioneers of no-till grain cultivation His system is referred to as "natural farming", Fukuoka Farming, or the Fukuoka Method.

Galileo Galilei

Galileo Galilei (15 February 1564 - 8 January 1642) was a Tuscan (Italian) physicist, mathematician, astronomer, and philosopher who played a major role in the Scientific Revolution. His achievements include improvements to the telescope and consequent astronomical observations, and support for Copernicanism. Galileo has been called the "father of modern observational astronomy", the "father of modern physics", the "father of science", and "the Father of Modern Science". The motion of uniformly accelerated objects, taught in nearly all high school and introductory college physics courses, was studied by Galileo as the subject of kinematics.

Patrick Geddes

Sir Patrick Geddes (1854 - 1932) was a Scottish biologist and botanist, known also as an innovative thinker in the fields of urban planning and

education. He was responsible for introducing the concept of "region" to architecture and planning and is also known to have coined the term conurbation. Geddes shared the belief with John Ruskin that social processes and spatial form are related. Therefore, by changing the spatial form it was possible to change the social structure as well. This was particularly important in the late 19th and early 20th century when industrialization was dramatically altering the conditions of life.

Nicholas Georgescu-Roegen

Nicholas Georgescu-Roegen, born Nicolae Georgescu (ConstanÅŃa, Romania, 4 February 1906 - Nashville, Tennessee, 30 October 1994) was a Romanian mathematician, statistician and economist, best known for his 1971 magnum opus *The Entropy Law and the Economic Process*, which situated the view that the second law of thermodynamics, i.e., that usable "free energy" tends to disperse or become lost in the form of "bound energy", governs economic processes. His book is considered a founding book in the field of thermoeconomics.

Chellis Glendinning

Chellis Glendinning (born 18 June 1947) is a European-American writer, psychotherapist, and political activist and anarco-primitivist.

Johann Wolfgang Goethe

Johann Wolfgang von Goethe (28 August 1749 - 22 March 1832) was a German writer. He argued that the organic nature of the land moulded the people and their customs - an argument that has recurred ever since, including recently in the work of Jared Diamond. He argued that laws could not be created by pure rationalism, since geography and history shaped habits and patterns. This stood in sharp contrast to the prevailing Enlightenment view that reason was sufficient to create well-ordered societies and good laws.

Edward Goldsmith

Edward René David ('Teddy') Goldsmith (born 8 November 1928 in Paris, France) is a Anglo-French environmentalist and eco-philosopher. Goldsmith is particularly well known for his anti-industrial, rural beliefs, and sympathy for tribal and other traditional peoples and their belief systems. He calls for conservation and organic farming. A founder of The Ecology Party (which became the Green Party) Goldsmith's variant of environmentalism has put him at odds with the current left-wing British Green Party but has won him support among members of the Conservative Old Right.

Al Gore

Albert Arnold Gore, Jr (born March 31, 1948) is an American environmental activist, author, public intellectual, businessperson, former politician, and former journalist He served as the forty-fifth Vice President of the United States from 1993 to 2001 under President Bill Clinton. Gore is the recipient of a number of awards including the Nobel Peace Prize (together with the Intergovernmental Panel on Climate Change) in 2007, a Primetime Emmy Award for Current TV in 2007, and a Webby Award in 2005 He also starred in the 2006 documentary *An Inconvenient Truth*, which won an Academy Award in 2007 He is currently the founder and chair of Alliance for Climate Protection.

Felix Guattari

Pierre-Félix Guattari (April 30, 1930 - August 29, 1992) was a French militant, institutional psychotherapist and philosopher, a founder of both schizoanalysis and ecosophy. Guattari is best known for his intellectual collaborations with Gilles Deleuze, most notably *Anti-Oedipus* (1972) and *A Thousand Plateaus* (1980). In *Les Trois Ecologies* (1989) Guattari holds that traditional environmentalist perspectives obscure the complexity of the relationship between humans and their natural environment through its maintenance of the dualistic separation of human (cultural) and non-human (natural) systems; he envisions ecosophy as a new field with a monistic and pluralistic approach to such study. Ecology in the Guattarian sense then, is a study of complex phenomena, including human

subjectivity, the environment, and social relations, all of which are intimately interconnected.

Ernst Haeckel

Ernst Heinrich Philipp August Haeckel (February 16, 1834 - August 9, 1919), was an eminent German biologist, naturalist, philosopher, physician, professor and artist who discovered, described and named thousands of new species, mapped a genealogical tree relating all life forms, and coined many terms in biology, including phylum, phylogeny, ecology and the kingdom Protista.

Matthew Hale

Sir Matthew Hale (1609-1676), in his book *The primitive origination of mankind, considered and examined according to the light of nature* (1677) anticipates some themes developed later by Thomas Malthus.

Garrett Hardin

Garrett James Hardin (April 21, 1915 - September 14, 2003) was a leading and controversial ecologist from Dallas, Texas, who was most known for his 1968 paper, *The Tragedy of the Commons*. He is also known for Hardin's First Law of Ecology, which states "You cannot do only one thing", and used the ubiquitous phrase "Nice guys finish last" to sum up the "selfish gene" concept of life and evolution.

Martin Heidegger

Martin Heidegger (26 September 1889 - 26 May 1976) was an influential German philosopher His best known book, *Being and Time*, is generally considered to be one of the most important philosophical works of the 20th century.

David Holmgren

Co-founder of the practice of Permaculture.

Max Horkheimer

Max Horkheimer (February 14, 1895 - July 7, 1973) was a German philosopher and sociologist, and a founder and guiding thinker of critical theory (or, broadly speaking, a founding member of the Frankfurt School).

Michael Hough

Lanscaping Professor at University of Toronto and author of *Cities and Natural Process*.

Ebenezer Howard

Sir Ebenezer Howard (29 January 1850 - May 1, 1928) was a prominent British urban planner. In his his book (1898) titled *To-Morrow: A Peaceful Path to Real Reform*, which was reprinted in 1902 as *Garden Cities of To-Morrow*, he offers a vision of towns free of slums and enjoying the benefits of both town (such as opportunity, amusement and high wages) and country (such as beauty, fresh air and low rents).

Alexander von Humboldt

Friedrich Wilhelm Heinrich Alexander Freiherr von Humboldt (September 14, 1769 - May 6, 1859) was a German naturalist and explorer. Humboldt's quantitative work on botanical geography was foundational to the field of biogeography.

Ivan Illich

Ivan Illich (Vienna, 4 September 1926 - Bremen, 2 December 2002) was an Austrian philosopher and anarchist social critic. He authored a series of critiques of the institutions of contemporary western culture and their effects of the provenance and practice of education, medicine, work, energy use, and economic development. In 1971 Illich imagined a world where people learned mostly from each other rather than from experts and where information would be available everywhere anytime - in railway stations, factories, cafes, hospitals everywhere.

Jane Jacobs

Jane Jacobs, OC, OOnt (May 4, 1916 - April 25, 2006) was an American-born Canadian urbanist, writer and activist. She is best known for *The Death and Life of Great American Cities* (1961), a powerful critique of the urban renewal policies of the 1950s in the United States. The book has been credited with reaching beyond planning issues to influence the spirit of the times. In her book *The Economy of Cities* (1969) she states that cities will be the mines of the future, thus forecasting (the need for) reuse of materials in building and in industry. In the late 1970s she was one of the founders of the Energy Probe Research Foundation, that demonstrated the environmental advantages inherent in cities and city life.

Theo Jansen

Theo Jansen (born March 17, 1948, in The Hague, Netherlands) is a Dutch artist and kinetic sculptor. He builds large works which resemble skeletons of animals and are able to walk using the wind on the beaches of the Netherlands. Jansen is dedicated to creating artificial life through the use of genetic algorithms, which simulate evolution inside their code. Genetic algorithms can be modified to solve a variety of problems including circuit design, and in the case of Jansen's creations, complex systems.

Derrick Jensen

Derrick Jensen (born December 19, 1960) is an American author and environmental activist. Jensen is often labeled an anarcho-primitivist, by which is meant he concludes that civilization is inherently unsustainable and based on violence. He argues that the modern industrial economy is fundamentally at odds with healthy relationships, the natural environment, and indigenous peoples. In *A Language Older Than Words* and also in an article entitled *Actions Speak Louder Than Words*, Jensen states "Every morning when I awake I ask myself whether I should write or blow up a dam I tell myself I should keep writing, though I'm not sure that's right".

William Stanley Jevons

William Stanley Jevons (September 1, 1835 - August 13, 1882), English economist and logician, was born in Liverpool. He expounded in his book

The Theory of Political Economy (1871) the "final" (marginal) utility theory of value. It was for *The Coal Question* (1865), in which he called attention to the gradual exhaustion of Britain's coal supplies, that he received public recognition.

Johannesburg Earth Summit

The World Summit on Sustainable Development, WSSD or Earth Summit 2002 took place in Johannesburg, South Africa, from 26 August to 4 September 2002. It was convened to discuss sustainable development by the United Nations WSSD gathered a number of leaders from business and non-governmental organizations, 10 years after the first Earth Summit in Rio de Janeiro (It was therefore also informally nicknamed "Rio+10").

Hans Jonas

Hans Jonas (May 10, 1903 - February 5, 1993) was a German-born philosopher. He is best known for his influential work *The Imperative of Responsibility* (German 1979, English 1984). His work centers on social and ethical problems created by technology. Jonas insists that human survival depends on our efforts to care for our planet and its future. He formulated a new and distinctive supreme principle of morality: "Act so that the effects of your action are compatible with the permanence of genuine human life."

Theodore Kaczynski

Theodore John Kaczynski (born May 22, 1942), also known as the Unabomber, is an American mathematician and social critic who carried out a campaign of bombings and mail bombings. On April 24, 1995, Kaczynski sent a letter to *The New York Times*, promising "to desist from terrorism" if *The New York Times* or *The Washington Post* published his manifesto. In his *Industrial Society and Its Future* (also called the *Unabomber Manifesto*), he argued that his actions were an extreme but necessary tactic to attract attention to the erosion of human freedom necessitated by modern technologies requiring large-scale organization.

Karl Kapp

Karl William Kapp (October 27, 1910 - April 4, 1976) was a German American economist is one of the founders of Ecological economics. Since the late 1960s Kapp increasingly applied Ludwig von Bertalanffy's open systems theory for the conceptualization of the development process, and integrated this with N Georgescu-Roegen's conceptualization of the economic process as an entropic transformation process since the 1970s.

Jeffrey Kenworthy

Jeffrey Kenworthy is professor at Murdoch University in Perth, Australia. Together with Peter Newman, he is author of various studies on automobile dependency and city form.

Erazim Kohák

Erazim Kohák (born May 21, 1933 in Prague) is a Czech philosopher and writer. Influenced by the phenomenology of Edmund Husserl, he is an active in ecological associations and non governmental organizations.

Léon Krier

Léon Krier (born 7 April 1946 in Luxembourg City) is an architect, architectural theorist and urban planner. From the late 1970s onwards (but especially during the 1980s) Krier has been one of the most influential neo-traditional architects and planners.

Lucien Kroll

Lucien Kroll is a Belgian architect born in Bruxelles in 1927. His critique to the modern movement led him to include chaos, vernacular expressions and stylistic juxtapositions which could host and represent the variety and conflictuality of urban life.

Kyoto Protocol

The Kyoto Protocol is a protocol to the international Framework Convention on Climate Change. It was adopted for use on 11 December 1997 by the 3rd Conference of the Parties, which was meeting in Kyoto, and it entered into force on 16 February 2005. As of May 2008, 182 parties have ratified the protocol. Kyoto includes flexible mechanisms which allow Annex I economies to meet their greenhouse gas emission limitation by purchasing GHG emission reductions from elsewhere. These can be bought either from financial exchanges, from projects which reduce emissions in non-Annex I economies under the Clean Development Mechanism (CDM), from other Annex 1 countries under the JI, or from Annex I countries with excess allowances.

Pierre Simon Laplace

Pierre-Simon, marquis de Laplace (23 April 1749 - 5 March 1827) was a French mathematician and astronomer whose work was pivotal to the development of mathematical astronomy and statistics. He summarized and extended the work of his predecessors in his five volume *Mécanique Céleste* (Celestial Mechanics) (1799-1825). This seminal work translated the geometric study of classical mechanics to one based on calculus, opening up a broader range of problems.

Serge Latouche

Serge Latouche is an emeritus professor at the University of Paris-Sud. His research was directed in criticizing the concepts of development and growth in neoliberal societies, proposing the idea of convivial de-growth.

Le Corbusier

Charles-Åldouard Jeanneret-Gris, who chose to be known as Le Corbusier (October 6, 1887 - August 27, 1965), was a Swiss-born architect, designer, urbanist, writer and also painter, who is famous for his contributions to Modern architecture.

Gottfried Leibniz

Gottfried Wilhelm Leibniz (1 July 1646 - 14 November 1716) was a German polymath who wrote primarily in Latin and French. He occupies an equally grand place in both the history of philosophy and the history of mathematics. He invented calculus independently of Newton, and his notation is the one in general use since then. He also invented the binary system, foundation of virtually all modern computer architectures. In philosophy, he is mostly remembered for optimism, ie his conclusion that our universe is, in a restricted sense, the best possible one God could have made (see *Candide, ou l'optimisme*).

Ivan Leonidov

Ivan Ilich Léonidov (born February 9, 1902, Tver Oblast -1959 November 6, Moscow) was a Russian constructivist architect, urban planner, painter and teacher.

Giacomo Leopardi

Giacomo Taldegardo Francesco di Sales Saverio Pietro Leopardi, Conte (June 29, 1798 - June 14, 1837) was an Italian poet, essayist, philosopher, and philologist. While for most of the romantic poet nature was seen as a "positive" and inherently good entity, Leopardi developed a conception of nature dominated by a destructive mechanicism. His pessimism, in both an "historical and a "cosmic" sense characterizes all of his work.

Louis Le Roy

Louis G le Roy (Amsterdam, 31 oktober 1924), is een Nederlands beeldend kunstenaar, schrijver, Professor honoris causa, ecotect en leraar tekenen. In zijn boek *Natuur uitschakelen, natuur inschakelen* (1973) ontvouwt hij zijn ideeën over de manier waarop natuur en cultuur geïntegreerd dienen te zijn. Deze ideeën worden sinds de jaren zeventig in zijn project *Ecokathedraal in Mildam* (bij Heerenveen) waarin hij een 'wilde' natuurontwikkeling combineert met gestapelde constructies van hergebruikt straatmateriaal. Centraal in zijn ideeën staat dat de mens de natuur niet moet beheersen, maar samen dient te werken met haar groeikracht om zo

de hoogste graad van complexiteit te bereiken Deze complexiteit vereist niet een korte periode, maar een langdurige interactie tussen mens en natuur

Live 8

Live 8 was a string of benefit concerts that took place on 2 July 2005, in the G8 states and in South Africa. They were timed to precede the G8 Conference and Summit held at the Gleneagles Hotel in Auchterarder, Scotland from 6-8 July 2005; they also coincided with the 20th anniversary of Live Aid Run in support of the aims of the UK's "Make Poverty History" campaign and the Global Call for Action Against Poverty, the shows planned to pressure world leaders to drop the debt of the world's poorest nations, increase and improve aid, and negotiate fair trade rules in the interest of poorer countries. Ten simultaneous concerts were held on 2 July and one on 6 July On 7 July the G8 leaders pledged to double 2004 levels of aid to poor nations from US\$25 to US\$50 billion by the year 2010 Half of the money was to go to Africa.

Live Aid

Live Aid was a multi-venue rock music concert held on July 13, 1985 (1985-07-13). The event was organized by Bob Geldof and Midge Ure to raise funds for famine relief in Ethiopia Billed as the 'global juke-box', the event was held simultaneously in Wembley Stadium, London (attended by 82,000 people) and JFK Stadium, Philadelphia (attended by about 99,000 people). On the same day, concerts inspired by the initiative happened in other countries, such as Australia. It was one of the largest-scale satellite link-ups and television broadcasts of all time: an estimated 400 million viewers, across 60 countries, watched the live broadcast.

Live Earth

Live Earth is an annual event developed to to combat climate change. The first series of benefit concerts were held on July 7, 2007 in a number of countries around the world. The next Live Earth will be held on December 7, 2008 in only one place, Mumbai, India.

Bjørn Lomborg

Bjørn Lomborg (born January 6, 1965) is a Danish author, academic, and environmentalist. He became internationally-known for his best-selling and controversial book *The Skeptical Environmentalist*, a controversial book whose main thesis is that many of the most-publicized claims and predictions of environmentalists are exaggerated.

James Lovelock

Dr James Ephraim Lovelock (born 26 July 1919) is an independent scientist, author, researcher, environmentalist, and futurist who lives in Cornwall, in the south west of England. He is known for proposing the Gaia hypothesis, in which he postulates that the Earth functions as a kind of superorganism.

General Ned Ludd

Ned Ludd or Ned Lud (possibly born Ned Ludlam) is the person from whom the Luddites took their name. His actions were the inspiration for the folkloric character of "Captain Ludd" (also known as King or General) who became the Luddites' imagined leader and founder. Although no actual proof of his existence has been found, it is believed that he came from the village of Anstey, just outside Leicester.

Niklas Luhmann

Niklas Luhmann (December 8, 1927 - November 6, 1998) was a German sociologist, administration expert, and a prominent thinker in sociological systems theory. Luhmann's Systems theory was based on, what he called, the "evolution of communication": from oral communication, over Writing systems towards electronic media and parallel with the evolution of society through functional differentiation.

Joanna Macy

Joanna Rogers Macy (born May 2, 1929), is a scholar of Buddhism, general systems theory, and deep ecology. She is a voice in movements for peace,

justice, and a safe environment. She has created a theoretical framework for personal and social change, and a workshop methodology for its application. Her work addresses psychological and spiritual issues, Buddhist thought, and contemporary science.

Alberto Magnaghi

Alberto Magnaghi (Torino, 1941) is professor of Territorial Planning at University of Florence, is the most prominent figure in the Territorialist School (see Territorialism).

Thomas Malthus

Thomas Robert Malthus FRS (13 February 1766 - 23 December 1834) was an English political economist and demographer. He expressed views on population growth and noted the potential for populations to increase rapidly, and often faster than the food supply available to them. This scenario, outlined in his treatise *An Essay on the Principle of Population*, is known as a Malthusian catastrophe.

George Perkins Marsh

George Perkins Marsh (March 15, 1801 - July 23, 1882), an American diplomat and philologist, is considered by some to be America's first environmentalist. *Man and Nature* constituted an early work of ecology. Marsh argued that deforestation could lead to desertification. Referring to the clearing of once-lush lands surrounding the Mediterranean, he asserted "the operation of causes set in action by man has brought the face of the earth to a desolation almost as complete as that of the moon".

Humberto Maturana

Humberto Maturana (born September 14, 1928, in Santiago, Chile) is a Chilean biologist. Maturana and his student Francisco Varela were the first to define and employ the concept of autopoiesis. Aside from making important contributions to the field of evolution, Maturana is also a founder of constructivist epistemology or radical constructivism, an epistemology built upon empirical findings of neurobiology.

James Clerk Maxwell

James Clerk Maxwell (13 June 1831 - 5 November 1879) was a Scottish mathematician and theoretical physicist. His most significant achievement was the development of the classical electromagnetic theory, synthesizing all previous unrelated observations, experiments and equations of electricity, magnetism and even optics into a consistent theory. His set of equations—Maxwell's equations—demonstrated that electricity, magnetism and even light are all manifestations of the same phenomenon: the electromagnetic field. From that moment on, all other classical laws or equations of these disciplines became simplified cases of Maxwell's equations. Maxwell's work in electromagnetism has been called the "second great unification in physics", after the first one carried out by Newton.

John McConnell

John McConnell (born March 22, 1915), the founder and creator of Earth Day, has demonstrated a major passion for peace, religion, and science throughout his life. He has made efforts to relieve human suffering and promote the common good. His interests include attempting to answer many of the critical problems that face humanity today.

William McDonough

William Andrews McDonough (b February 21, 1951, Hong Kong) is an American architect and founding principal of William McDonough + Partners, whose career is focused on designing environmentally sustainable buildings and transforming industrial manufacturing processes. In 2002 he wrote (with Michael Braungart) *Cradle to Cradle: Remaking the Way We Make Things*. In 2004 he received a National Design Award for environmental design from the Smithsonian Cooper-Hewitt National Design Museum.

John McHale

John McHale (born Maryhill, Glasgow 1922, died Houston, Texas 1978) was an artist, a founder member of the Institute of Contemporary Arts, and a founder of the Independent Group, which was a British movement

that originated Pop Art which grew out of a fascination with American mass culture and post-WWII technologies. In the 1960s he was an Associate with Buckminster Fuller in the World Resources Inventory and in the World Design Science Decade Centre at Southern Illinois University Carbondale where he co-authored a number of the reports.

Ian McHarg

Ian L McHarg (November 20, 1920 - March 5, 2001) was born in Glasgow, Scotland and became a landscape architect and a renowned writer on regional planning using natural systems. In 1969 he published *Design with Nature*, which was essentially a book of step-by-step instructions on how to break down a region into its appropriate uses. McHarg also was interested in garden design and believed that homes should be planned and designed with good private garden space.

Margaret Mead

Margaret Mead (December 16, 1901, Philadelphia - November 15, 1978, New York City) was an American cultural anthropologist. Together with Gregory Bateson, she was one of the first theoreticians to apply Systems Theory into anthropological studies.

Carolyn Merchant

Carolyn Merchant (born 1936 in Rochester, New York) is an American ecofeminist philosopher and historian of science most famous for her theory on the 'Death of Nature', whereby she identifies the Enlightenment as the period when science began to atomise, objectify and dissect nature, foretelling its eventual conception as inert. Her works were important in the development of environmental history and the history of science.

Metabolists

In 1959 a group of Japanese architects and city planners (Kiyonori Kikutake, Fumihiko Maki, Masato Otaka, Kisho Kurokawa and Kiyoshi Awazu) joined forces under the name the Metabolists. Their vision of a city of the

future inhabited by a mass society was characterized by large scale, flexible and extensible structures that enable an organic growth process. In their view the traditional laws of form and function were obsolete. They believed that the laws of space and functional transformation held the future for society and culture.

Patrick Michaels

Patrick J Michaels, (born February 15, 1950) is widely regarded in the media as a global warming skeptic who contends that the changes will be minor, not catastrophic, and even beneficial in many cases.

Lieberecht Migge

Leberecht Migge (March 30, 1881, Danzig (now Gdansk, Poland) - May 30, 1935, Worpswede) was a German landscape architect, regional planner and polemical writer, best known for the incorporation of social gardening principles in the Siedlungswesen (settlement) movement during the Weimar Republic. Renewed interest in his work in recent decades bears relevance to current concerns about sustainability.

John Stuart Mill

John Stuart Mill (20 May 1806 - 8 May 1873), British philosopher, political economist. In section VI of book VI of his *Principles of Political Economy, Of the Stationary State*, he demonstrated an early insight into the value of the natural world recognizing wealth beyond the material, and advocating for a zero-growth economy

Millennium Development Goals

The Millennium Development Goals (MDGs) are eight international development goals that 189 United Nations member states and at least 23 international organizations have agreed to achieve by the year 2015. They include halving extreme poverty, reducing child mortality rates, fighting disease epidemics such as AIDS, and developing a global partnership for development.

Bill Mollison

Together with David Holmgren, he is co-founder of the practice of Permaculture.

William Morris

William Morris (24 March 1834 - 3 October 1896) was an English textile designer, artist, writer, and socialist associated with the Pre-Raphaelite Brotherhood and the English Arts and Crafts Movement.

Timoty Morton

Professor of Literature and the Environment at University of California Davis, author in 2007 of *Ecology without Nature: Rethinking Environmental Aesthetics*.

Wilhelm Gottfried Moser

Forestry economist in 1700s.

Lewis Mumford

Lewis Mumford (October 19, 1895 - January 26, 1990) was an American historian of technology and science. Particularly noted for his study of cities and urban architecture, he had a tremendously broad career as a writer that also included a period as an influential literary critic. Mumford was influenced by the work of Scottish theorist Sir Patrick Geddes.

Glenn Murcutt

Glenn Murcutt (born 25 July 1936 in London) is an Australian architect. He is also the founding president of the Australian Architecture Association. He won the Alvar Aalto Medal in 1992, and the Pritzker Prize in 2002.

Arne Næss

Arne Dekke Eide Næss (born January 27, 1912) is widely regarded as the foremost Norwegian philosopher of the 20th century, is the founder of deep ecology and the first to introduce the term Ecosophy. Næss cited Rachel Carson's 1962 book *Silent Spring* as being a key influence in his vision of deep ecology.

Neurogreen

Neurogreen is a mailing list founded in 2005 by Alex Foti. The Neurogreen Manifesto reads: "The end of the world is not an event. It's a process. Currently unfolding Neurogreen is born out of the conviction that destruction of the biosphere, devastating inequality and global civil war are the three dimensions of an epochal crisis in global society and in its institutions presiding over economic value, political sovereignty and democratic legitimacy".

John von Neumann

John von Neumann (Hungarian: margittai Neumann János Lajos) (December 28, 1903 - February 8, 1957) was a Hungarian American mathematician who made major contributions to a vast range of fields, including set theory, functional analysis, quantum mechanics, ergodic theory, continuous geometry, economics and game theory, computer science, numerical analysis, hydrodynamics (of explosions), and statistics, as well as many other mathematical fields.

Peter Newman

Peter William Geoffrey Newman is an Environmental scientist, activist and educator based in Perth, Western Australia. Peter Newman is perhaps best known internationally for coining the term 'automobile dependence' in the second half of the eighties to explain how the kind of cities we are building based on sprawling suburbs was inevitably leading to the growth in automobile use.

Isaac Newton

Sir Isaac Newton, (4 January 1643 - 31 March 1727) was an English physicist, mathematician, astronomer, natural philosopher, alchemist and theologian. His *Philosophiæ Naturalis Principia Mathematica*, published in 1687, is considered to be the most influential book in the history of science. In this work, Newton described universal gravitation and the three laws of motion, laying the groundwork for classical mechanics, which dominated the scientific view of the physical universe for the next three centuries and is the basis for modern engineering.

Poor Konrad

The collective name adopted by all Swabian peasants during their rebellion against taxes in 1514.

The Odum Brothers

Howard Thomas Odum (1924, Chapel Hill, North Carolina - 2002 Gainesville, Florida) was an American ecologist. He is known for his pioneering work on ecosystem ecology, and for his provocative proposals for additional laws of thermodynamics, informed by his work on general systems theory.

Eugene Pleasants Odum (September 17, 1913 - August 10, 2002) was an American scientist known for his pioneering work on ecosystem ecology.

William Petty

Sir William Petty (May 27, 1623 - December 16, 1687) was an English economist, scientist and philosopher. He imagined a future in which "the city of London is seven times bigger than now, and that the inhabitants of it are 4,690,000 people, and that in all the other cities, ports, towns, and villages, there are but 2,710,000 more". He expected this some time round 1800, extrapolating existing trends. Long before Malthus, he noticed the potential of human population to increase. But he also saw no reason why such a society should not be prosperous.

Renzo Piano

Renzo Piano (born September 14, 1937) is a world renowned Italian architect and recipient of the Pritzker Architecture Prize, AIA Gold Medal and the Sonning Prize.

Gifford Pinchot

Gifford Pinchot (August 11, 1865 - October 4, 1946) was the first Chief of the United States Forest Service (1905-1910) and the Governor of Pennsylvania (1923-1927, 1931-1935). He was a Republican and Progressive. Pinchot is known for reforming the management and development of forests in the United States and for advocating the conservation of the nation's reserves by planned use and renewal. He called it "the art of producing from the forest whatever it can yield for the service of man". Pinchot coined the term conservation ethic as applied to natural resources.

Cécil Pigou

Arthur Cecil Pigou (November 18, 1877 - March 7, 1959) was an English economist. Pigou's major work, *Wealth and Welfare* (1912, 1920), brought welfare economics into the scope of economic analysis. In particular, Pigou is responsible for the distinction between private and social marginal products and costs. He originated the idea that governments can, via a mixture of taxes and subsidies, correct such perceived market failures - or "internalize the externalities". Pigovian taxes, taxes used to correct negative externalities, are named in his honor.

Max Planck

Karl Ernst Ludwig Marx Planck, better known as Max Planck (April 23, 1858 - October 4, 1947) was a German physicist. He is considered to be the founder of quantum theory.

Ilya Prigogine

Ilya Romanovic Prigogine (January 25, 1917 - May 28, 2003) was a Russian-born naturalized Belgian chemist. He is known best due to his defini-

tion of dissipative structures and their role in thermodynamic systems far from equilibrium, a discovery that won him the Nobel Prize in Chemistry in 1977. Dissipative structure theory led to pioneering research in self-organizing systems, as well as philosophic inquiries into the formation of complexity on biological entities and the quest for a creative and irreversible role of time in the natural sciences. His work is seen by many as a bridge between natural sciences and social sciences.

Rekombinant

“Rekombinant is a network environment launched by Franco “Bifo” Berardi and Matteo Pasquinelli on the 22nd July 2000.

Rekombinant is a listblog: a weblog running as a web interface of a mailing list. Everyday around 1700 subscribers post and discuss articles, projects, events: most of them are based in Italy, around 40% in Europe and in the rest of the world.

Rekombinant focuses on radical philosophy, social conflicts, media activism, networking art, deviant avant-gardes, libidinal economy, western psycho-pathology, collective imagery, autonomous universities. In the recent years Rekombinant has been representing especially in Europe a nodal point between net culture, global activism and radical thought, connecting with other mailing lists and networks such as Nettime and Multitudes”.

Glenn Reynolds

Glenn Harlan Reynolds (born 1960) is Beauchamp Brogan Distinguished Professor of Law at the University of Tennessee, and is best known for his weblog, Instapundit, one of the most widely read American political weblogs. Reynolds is often described as conservative, but in fact holds liberal views on social issues such as abortion, the War on Drugs and gay marriage. He describes himself as a libertarian and more specifically a libertarian transhumanist.

Mike Reynolds

Michael Reynolds is an architect based in New Mexico and a proponent of “radically sustainable living”. He has been a forceful and controver-

sial critic of the profession of architecture for its failure to deal with the amount of waste that building design creates.

Rio Earth Summit

The United Nations Conference on Environment and Development, also known as the Rio Summit, Earth Summit (or, in Portuguese, Eco '92) was a major United Nations conference held in Rio de Janeiro from June 3 to June 14, 1992. The Earth Summit resulted in the following documents: Rio Declaration on Environment and Development, Agenda 21, Convention on Biological Diversity, Forest Principles, Framework Convention on Climate Change.

Jeremy Rifkin

Jeremy Rifkin (born 1943, Denver, Colorado), is an American economist, writer, public speaker and activist. In his 1980 book *Entropy: A New World View*, seek to analyse the world's economic and social structures by using the second law of thermodynamics, that is, the law of entropy. The authors argue that humanity is wasting resources at an increasing rate, and that will lead to the destruction of our civilization, which has happened before on a smaller scale for past empires. The book promotes the use of sustainable energy sources and slow resource consumption as the solution to delay the inevitable: death by entropy.

Robin Hood

Robin Hood is an archetypal figure in English folklore, whose story originates from medieval times but who remains significant in popular culture where he is painted as a man known for robbing the rich to give to the poor and fighting against injustice and tyranny.

Jean Jacques Rousseau

Jean Jacques Rousseau (Geneva, June 28, 1712 - Ermenonville, July 2, 1778) was a major Swiss philosopher, writer, and composer of the Enlightenment.

John Ruskin

John Ruskin (8 February 1819 - 20 January 1900) is best known for his work as an art critic, sage writer, and social critic, but is remembered as an author, poet and artist as well. Ruskin's essays on art and architecture were extremely influential in the Victorian and Edwardian eras. With his general theory, claiming that man and his art must be profoundly radiated in nature and ethics, he influenced William Morris) and the birth of the Arts and Crafts Movement.

Sym van der Ryn

Sim Van der Ryn is acknowledged as a leader in "sustainable architecture". He is also a researcher and educator. Van der Ryn's driving professional interest has been applying principles of physical and social ecology to architecture and environmental design.

Ignacy Sachs

Ignacy Sachs (Warsaw, 1927) is a Polish, naturalized French economist. He is also said to be an ecosocioeconomist, due to his ideas about development as a combination of economic growth, equalitarian increase in social well-being and environmental preservation.

Wolfgang Sachs

Wolfgang Sachs, is a German researcher and author with many books including *Fair Future*, *Environment and Human Rights*, and *Jo'burg Memo*. He is also the editor of the *Development Dictionary*. He suggests three ways to reach sustainable development, three perspectives which are related to a security crisis: the home perspective, the perspective of an astronaut, and the endogenous perspective.

Fritz Schumacher

Ernst Friedrich "Fritz" Schumacher (16 August 1911 - 4 September 1977) was an internationally influential economic thinker with a professional background as a statistician and economist in Britain. He is best known

for his critique of Western economies and his proposals for human-scale, decentralized and appropriate technologies. According to The Times Literary Supplement, his 1973 book *Small Is Beautiful* is among the 100 most influential books published since World War II. It was soon translated into many languages and brought international fame to Schumacher, after which Schumacher was invited to many international conferences, university guest speaker lectures and consultations. Schumacher's basic development theories have been summed up in the catch-phrases Intermediate Size and Intermediate Technology. Schumacher's other notable work is the 1977 *A Guide For The Perplexed*, which is a critique of materialist scientism and an exploration of the nature and organization of knowledge.

Scientology

Scientology is a body of beliefs and related practices initially created by American science fiction author L. Ron Hubbard. The major organization promoting Scientology is the Church of Scientology, a hierarchical organization founded by Hubbard, while independent groups using Hubbard's materials are collectively referred to as the Free Zone. Hubbard developed Scientology teachings in 1952 as a successor to his earlier self-help system, Dianetics. Hubbard later characterized Scientology as an "applied religious philosophy" and the basis for a new religion. Scientology encompasses "auditing", a spiritual rehabilitation philosophy and techniques, and covers topics such as morals, ethics, detoxification, education and management.

Vandana Shiva

Vandana Shiva (b November 5, 1952, Dehra Dun, Uttarakhand, India), is a physicist, environmental activist and author. Shiva participated in the nonviolent Chipko movement during the 1970s. The movement, whose main participants were women, adopted the tactic of hugging trees to prevent their felling. She is one of the leaders of the International Forum on Globalization, (along with Jerry Mander, Edward Goldsmith, Ralph Nader, Jeremy Rifkin, et al.), and a figure of the global solidarity movement known as the alter-globalization movement.

Paolo Soleri

Paolo Soleri (born June 21, 1919) is an Italian-American visionary architect with a life-long commitment to research and experimentation in design and town planning. He established Arcosanti and the educational Cosanti Foundation. His major project is Arcosanti, a planned community for 5,000 people near Phoenix, Arizona, under construction since 1970. The project is based on Soleri's concept of "Arcology," architecture coherent with ecology. An arcology is a hyperdense city designed to maximize human interaction; maximize access to shared, cost-effective infrastructural services like water and sewage; minimize the use of energy, raw materials and land; reduce waste and environmental pollution; and allow interaction with the surrounding natural environment. Arcosanti is the prototype of the desert arcology.

Baruch Spinoza

Baruch or Benedict de Spinoza (November 24, 1632 - February 21, 1677) was a Dutch philosopher of Portuguese Jewish origin. Revealing considerable scientific aptitude, the breadth and importance of Spinoza's work was not fully realized until years after his death. Today, he is considered one of the great rationalists of 17th-century philosophy, laying the groundwork for the 18th century Enlightenment and modern biblical criticism. By virtue of his magnum opus, the posthumous *Ethics*, in which he opposed Descartes' mind-body dualism, Spinoza is considered to be one of Western philosophy's most important philosophers.

Stockholm Conference

The United Nations Conference on the Human Environment (also known as the Stockholm Conference) was an international conference convened under United Nations auspices held in Stockholm Sweden, from June 5-16, 1972. It was the UN's first major conference on international environmental issues, and marked a turning point in the development of international environmental politics.

Maurice Strong

Maurice F. Strong (born April 29, 1929, in Oak Lake, Manitoba) is one of the world's leading proponents of the United Nations' involvement in world affairs. Supporters portray him as one of the world's leading environmentalists. Secretary General of both the 1972 United Nations Conference on the Human Environment, which launched the world environment movement, and the 1992 Earth Summit and first Executive Director of the United Nations Environment Programme (UNEP), Strong has played a critical role in globalizing the environmental movement.

Captain Swing

Captain Swing was the name appended to some of the threatening letters during the rural English Swing Riots of 1830. Like the Luddites of 1812, the movement had an imaginary leader with a multiple-use name. His name was no doubt chosen, in a form of black humour, to echo the gallows which awaited rebels who got involved in his movement.

John Thackara

John Thackara is a symposiarch who designs events, projects, and organizations. He is also the Director of Doors of Perception (Doors), a design futures network with offices in Amsterdam and Bangalore. Founded as a conference in 1993, Doors now connects together a worldwide network of visionary designers, thinkers, and grassroots innovators. This unique community of practice is inspired by two related questions: "we know what new technology can do, but what is it for?" and, "how do we want to live?".

D'Arcy Wentworth Thompson

Sir D'Arcy Wentworth Thompson (May 2, 1860, Edinburgh - June 21, 1948, St Andrews, Scotland) was a biologist, mathematician, and classics scholar. A pioneering mathematical biologist, he is mainly remembered as the author of the 1917 book, *On Growth and Form*, an influential work of striking originality and elegance.

Henry David Thoreau

Henry David Thoreau (born David Henry Thoreau; July 12, 1817 - May 6, 1862) was an American author, naturalist, transcendentalist, tax resister, development critic, sage writer and philosopher. He is best known for his book *Walden*, a reflection upon simple living in natural surroundings, and his essay, *Civil Disobedience*, an argument for individual resistance to civil government in moral opposition to an unjust state. Thoreau's books, articles, essays, journals, and poetry total over 20 volumes. Among his lasting contributions were his writings on natural history and philosophy, where he anticipated the methods and findings of ecology and environmental history, two sources of modern day environmentalism.

Peter Trummer

Peter Trummer is head of the Associative design program at Berlage Institute. His research focuses on what he calls "population thinking in architecture"; in particular, how city life, urban planning policies, economic desires, and population growth may be better integrated into the design of living environments.

Francisco Varela

Francisco Javier Varela García (Sept 7, 1946 - May 28, 2001), was a Chilean biologist, philosopher and neuroscientist who, together with his teacher Humberto Maturana, is best known for introducing the concept of autopoiesis to biology.

William Vogt

William Vogt (1902-1968) was an ecologist and ornithologist, with a strong interest in population control. He was the author of best-seller *Road to Survival* (1948).

Piet Vollaard

Piet Vollaard (1955) is an architect, critic, co-founder of ArchiNed, the architecture website of the Netherlands, and Smart Architecture Founda-

tion, that seeks smart, intelligent, un-problematic, simple, efficient and optimistic architectural solutions for ecological problems.

Voltaire

François-Marie Arouet (21 November 1694 - 30 May 1778), better known by the pen name Voltaire, was a French Enlightenment writer, essayist, and philosopher known for his wit, philosophical sport, and defense of civil liberties, including freedom of religion and free trade.

Konrad Wachsmann

German-born American architect notable for his contributions to the mass production of building components.

Alfred Russel Wallace

Alfred Russel Wallace OM, FRS (8 January 1823 - 7 November 1913) was an English naturalist, explorer, geographer, anthropologist, and biologist. He is best known for independently proposing a theory of natural selection which prompted Charles Darwin to publish on his own theory. He was also considered the 19th century's leading expert on the geographical distribution of animal species and is sometimes called the "father of biogeography". Wallace was strongly attracted to unconventional ideas. His advocacy of Spiritualism and his belief in a non-material origin for the higher mental faculties of humans strained his relationship with the scientific establishment, especially with other early proponents of evolution. In addition to his scientific work he was a social activist who was critical of what he considered to be an unjust social and economic system in 19th-century Britain. His interest in biogeography resulted in his being one of the first prominent scientists to raise concerns over the environmental impact of human activity.

Barbara Ward

Barbara Mary Ward (23 May 1914 - 31 May 1981), was a British economist and writer interested in the problems of developing countries. She urged Western governments to share their prosperity with the rest of the

world and in the 1960s turned her attention to environmental questions as well. She was an early advocate of sustainable development before this term became familiar and was well-known as a journalist, lecturer and broadcaster. Ward was adviser to policy-makers in the UK, US and elsewhere.

Eugenius Warming

Johannes Eugenius Bülow Warming (November 3, 1841 - April 2, 1924), known as Eugen Warming, was a Danish botanist and a main founding figure of the scientific discipline of ecology. Warming wrote the first textbook (1895) on plant ecology, taught the first university course in ecology and gave the concept its meaning and content.

Lynn Townsend White

Lynn Townsend White, Jr (April 29, 1907 - March 30, 1987) was a professor of medieval history at Princeton, Stanford and, for many years, University of California, Los Angeles. He was president of Mills College, Oakland from 1943 to 1958. White's main area of research and inquiry was the role of technological invention in the Middle Ages. He believed that the Middle Ages were a decisive period in the genesis of Western technological supremacy, and that the "activist character" of medieval Western Christianity provided the "psychic foundations" of technological inventiveness. He also conjectured that the Christian Middle Ages were the root of ecological crisis in the 20th century, and wrote a highly influential article, *The Historical Roots of Our Ecologic Crisis*, published in the journal *Science* in 1967.

Norbert Wiener

Norbert Wiener (November 26, 1894, Columbia, Missouri - March 18, 1964, Stockholm, Sweden) was an American theoretical and applied mathematician. Wiener was a pioneer in the study of stochastic and noise processes, contributing work relevant to electronic engineering, electronic communication, and control systems. Wiener also founded cybernetics, a field that formalizes the notion of feedback and has implications for

engineering, systems control, computer science, biology, philosophy, and the organization of society.

Frank Lloyd Wright

Frank Lloyd Wright (born Frank Lincoln Wright, June 8, 1867 - April 9, 1959) was an American architect, promoter of organic architecture. In 1932 in *The Desappearing City* he proposed his plan for Broadacre City.

Ken Yeang

Ken Yeang (Yáng Jiīngwén) is a prolific Malaysian architect and writer best known for developing environmental design solutions for high-rise buildings in the tropics, what he has called "bioclimatic" design. Yeang's 1992 Menara Mesiniaga building in Subang Jaya Selangor, Malaysia is a catalogue of his bioclimatic techniques, including daring "vertical landscaping", external louvers to reduce solar heat gain, extensive natural ventilation and lighting, and an "active Intelligent Building" system for automated energy savings.

John Zerzan

John Zerzan (born 1943) is an American anarchist and primitivist philosopher and author. His works criticize agricultural civilization as inherently oppressive, and advocate drawing upon the ways of life of prehistoric humans as an inspiration for what a free society should look like. Some of his criticism has extended as far as challenging domestication, language, symbolic thought (such as mathematics and art) and the concept of time. His five major books are *Elements of Refusal* (1988), *Future Primitive and Other Essays* (1994), *Running on Emptiness* (2002), *Against Civilization: Readings and Reflections* (2005) and *Twilight of the machines* (2008).

Slavoj Žižek

Slavoj Žižek is a Post-Marxist sociologist, Lacanian, Hegelian philosopher, and cultural critic.