must be a circular \neconomy that recycles, reuses, or transforms its wastes. Of necessity it will be \nmuch more focused on essentials of food, energy, shelter, clean water, educa-\ntion, the arts, and rootedness in place and bioregion. It will be built by local \npeople who cherish and understand their places\nThe file is too long and its contents have been truncated.\n", "extra": {"cited_message_idx": 30, "search_result_idx": null, "evidence_text": "source"}, "url": "file-RAzDllTYQLyhHItDOsQv0sZY"}}, {"start_ix": 3856, "end_ix": 3867, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "tactiq-free-transcript-iP9QF_lBOyA.txt", "id": "file-CWgzJYsc2VMZ6yS9KoMxhOoC", "source": "my_files", "text": "# tactiq.io free youtube transcript\n# Ray Anderson: The business logic of sustainability\n# https://www.youtube.com/watch/iP9QF_lBOyA\n\n00:00:18.330 Believe me or not, I come offering a solution\n00:00:22.330 to a very important part of this larger problem,\n00:00:26.330 with the requisite focus on climate.\n00:00:28.330 And the solution I offer\n00:00:30.330 is to the biggest culprit\n00:00:32.330 in this massive mistreatment of the earth\n00:00:36.330 by humankind,\n00:00:38.330 and the resulting decline of the biosphere.\n00:00:41.330 That culprit is business and industry,\n00:00:44.330 which happens to be where I have spent the last 52 years\n00:00:47.330 since my graduation from Georgia Tech in 1956.\n00:00:51.330 As an industrial engineer,\n00:00:53.330 cum aspiring and then successful entrepreneur.\n00:00:57.330 After founding my company, Interface, from scratch\n00:01:00.330 in 1973, 36 years ago,\n00:01:03.330 to produce carpet tiles in America\n00:01:05.330 for the business and institution markets,\n00:01:08.330 and shepherding it through start-up and survival\n00:01:11.330 to prosperity and global dominance in its field,\n00:01:14.330 I read Paul Hawken's book,\n00:01:16.330 "The Ecology of Commerce,"\n00:01:18.330 the summer of 1994.\n00:01:21.330 In his book, Paul charges business and industry\n00:01:24.330 as, one, the major culprit\n00:01:27.330 in causing the decline of the biosphere,\n00:01:29.330 and, two, the only institution that is large enough,\n00:01:32.330 and pervasive enough, and powerful enough,\n00:01:34.330 to really lead humankind out of this mess.\n00:01:38.330 And by the way he convicted me\n00:01:41.330 as a plunderer of the earth.\n00:01:43.330 And I then challenged the people of Interface, my company,\n00:01:46.330 to lead our company and the entire industrial world to sustainability,\n00:01:50.330 which we defined as eventually operating\n00:01:52.330 our petroleum-intensive company in such a way\n00:01:55.330 as to take from the earth\n00:01:57.330 only what can be renewed by the earth, naturally and rapidly --\n00:02:01.330 not another fresh drop of oil --\n00:02:03.330 and to do no harm to the biosphere.\n00:02:07.330 Take nothing: do no harm.\n00:02:09.330 I simply said, "If Hawken is right\n00:02:11.330 and business and industry must lead,\n00:02:13.330 who will lead business and industry?\n00:02:15.330 Unless somebody leads, nobody will."\n00:02:18.330 It's axiomatic. Why not us?\n00:02:21.330 And thanks to the people of Interface,\n00:02:23.330 I have become a recovering plunderer.\n00:02:26.330 (Laughter)\n00:02:27.330 (Applause)\n00:02:32.330 I once told a Fortune Magazine writer\n00:02:36.330 that someday people like me would go to jail.\n00:02:39.330 And that became the headline of a Fortune article.\n00:02:41.330 They went on to describe me as America's greenest CEO.\n00:02:45.330 From plunderer to recovering plunderer,\n00:02:48.330 to America's greenest CEO in five years --\n00:02:51.330 that, frankly, was a pretty sad commentary\n00:02:53.330 on American CEOs in 1999.\n00:02:58.330 Asked later in the Canadian documentary, "The Corporation,"\n00:03:01.330 what I meant by the "go to jail"

remark,\n00:03:04.330 I offered that theft is a crime.\n00:03:08.330 And theft of our children's future would someday be a crime.\n00:03:13.330 But I realized, for that to be true --\n00:03:15.330 for theft of our children's future to be a crime --\n00:03:18.330 there must be a clear, demonstrable alternative\n00:03:21.330 to the take-make-waste industrial system\n00:03:24.330 that so dominates our civilization,\n00:03:27.330 and is the major culprit, stealing our children's future,\n00:03:30.330 by digging up the earth\n00:03:32.330 and converting it to products that quickly become waste\n00:03:36.330 in a landfill or an incinerator --\n00:03:38.330 in short, digging up the earth and converting it to pollution.\n00:03:43.330 According to Paul and Anne Ehrlich\n00:03:45.330 and a well-known environmental impact equation,\n00:03:48.330 impact -- a bad thing --\n00:03:50.330 is the product of population, affluence and technology.\n00:03:54.330 That is, impact is generated by people,\n00:03:58.330 what they consume in their affluence,\n00:04:00.330 and how it is produced.\n00:04:03.330 And though the equation is largely subjective,\n00:04:05.330 you can perhaps quantify people, and perhaps quantify affluence,\n00:04:09.330 but technology is abusive in too many ways to quantify.\n00:04:13.330 So the equation is conceptual.\n00:04:15.330 Still it works to help us understand the problem.\n00:04:18.329 So we set out at Interface, in 1994,\n00:04:23.330 to create an example:\n00:04:25.330 to transform the way we made carpet,\n00:04:27.330 a petroleum-intensive product for materials as well as energy,\n00:04:31.330 and to transform our technologies\n00:04:33.330 so they diminished environmental impact,\n00:04:36.330 rather than multiplied it.\n00:04:39.330 Paul and Anne Ehrlich's environmental impact equation:\n00:04:42.330 I is equal to P times A times T:\n00:04:45.330 population, affluence and technology.\n00:04:48.330 I wanted Interface to rewrite that equation so that it read\n00:04:54.330 I equals P times A divided by T.\n00:04:57.330 Now, the mathematically-minded will see immediately\n00:05:00.330 that T in the numerator increases impact -- a bad thing --\n00:05:03.330 but T in the denominator decreases impact.\n00:05:07.330 So I ask, "What would move T, technology,\n00:05:11.330 from the numerator -- call it T1 --\n00:05:13.330 where it increases impact,\n00:05:15.330 to the denominator -- call it T2 --\n00:05:18.330 where it reduces impact?\n00:05:21.330 I thought about the characteristics\n00:05:25.330 of first industrial revolution,\n00:05:27.330 T1, as we practiced it at Interface,\n00:05:30.330 and it had the following characteristics.\n00:05:34.330 Extractive: taking raw materials from the earth.\n00:05:38.330 Linear: take, make, waste.\n00:05:41.330 Powered by fossil fuel-derived energy.\n00:05:43.330 Wasteful: abusive and focused on labor productivity.\n00:05:47.330 More carpet per man-hour.\n00:05:50.330 Thinking it through, I realized that all those attributes\n00:05:53.330 must be changed to move T to the denominator.\n00:05:58.330 In the new industrial revolution extractive must be replaced by renewable;\n00:06:03.330 linear by cyclical;\n00:06:05.330 fossil fuel energy by renewable energy, sunlight;\n00:06:09.330 wasteful by waste-free;\n00:06:11.330 and abusive by benign;\n00:06:13.330 and labor productivity by resource productivity.\n00:06:17.330 And I reasoned that if we could make those transformative changes,\n00:06:21.330 and get rid of T1 altogether,\n00:06:23.330 we could reduce our impact to zero,\n00:06:26.330 including our impact on the climate.\n00:06:29.330 And that became the Interface plan in 1995,\n00:06:32.330 and has been the plan ever since.\n00:06:35.330 We have measured our progress very rigorously.\n00:06:39.330 So I can tell you how far we have come in the ensuing 12 years.\n00:06:43.330 Net

greenhouse gas emissions\n00:06:45.330 down 82 percent in absolute tonnage.\n00:06:49.330 (Applause)\n00:06:53.330 Over the same span of time\n00:06:55.330 sales have increased by two-thirds and profits have doubled.\n00:06:58.330 So an 82 percent absolute reduction\n00:07:01.330 translates into a 90 percent reduction\n00:07:03.330 in greenhouse gas intensity relative to sales.\n00:07:07.330 This is the magnitude\n00:07:09.330 of the reduction the entire global technosphere\n00:07:12.330 must realize by 2050\n00:07:15.330 to avoid catastrophic climate disruption --\n00:07:18.330 so the scientists are telling us.\n00:07:21.330 Fossil fuel usage is down 60 percent per unit of production,\n00:07:25.330 due to efficiencies in renewables.\n00:07:27.330 The cheapest, most secure barrel of oil there is\n00:07:30.330 is the one not used through efficiencies.\n00:07:33.330 Water usage is down 75 percent\n00:07:36.330 in our worldwide carpet tile business.\n00:07:38.330 Down 40 percent in our broadloom carpet business,\n00:07:41.330 which we acquired in 1993\n00:07:43.330 right here in California, City of Industry,\n00:07:45.330 where water is so precious.\n00:07:48.330 Renewable or recyclable materials are 25 percent of the total, and growing rapidly.\n00:07:52.330 Renewable energy is 27 percent of our total,\n00:07:55.330 going for 100 percent.\n00:07:57.330 We have diverted 148 million pounds --\n00:08:00.330 that's 74,000 tons --\n00:08:02.330 of used carpet from landfills,\n00:08:05.330 closing the loop on material flows\n00:08:07.330 through reverse logistics\n00:08:09.330 and post-consumer recycling technologies\n00:08:12.330 that did not exist when we started 14 years ago.\n00:08:16.330 Those new cyclical technologies\n00:08:18.330 have contributed mightily to the fact that we have produced and sold\n00:08:21.330 85 million square yards of climate-neutral carpet\n00:08:25.330 since 2004,\n00:08:27.330 meaning no net contribution to global climate disruption\n00:08:31.330 in producing the carpet throughout the supply chain,\n00:08:33.330 from mine and well head clear to end-of-life reclamation --\n00:08:38.330 independent third-party certified.\n00:08:40.330 We call it Cool Carpet.\n00:08:43.330 And it has been a powerful marketplace differentiator,\n00:08:46.330 increasing sales and profits.\n00:08:48.330 Three years ago we launched carpet tile for the home,\n00:08:52.330 under the brand Flor,\n00:08:54.330 misspelled F-L-O-R.\n00:08:57.330 You can point and click today at Flor.com\n00:08:59.330 and have Cool Carpet delivered to your front door in five days.\n00:09:03.330 It is practical, and pretty too.\n00:09:06.330 (Laughter)\n00:09:07.330 (Applause)\n00:09:13.330 We reckon that we are a bit over halfway\n00:09:15.330 to our goal: zero impact, zero footprint.\n00:09:20.330 We've set 2020 as our target year for zero,\n00:09:23.330 for reaching the top, the summit of Mount Sustainability.\n00:09:28.330 We call this Mission Zero.\n00:09:30.330 And this is perhaps the most important facet:\n00:09:33.330 we have found Mission Zero to be incredibly good for business.\n00:09:37.330 A better business model,\n00:09:40.330 a better way to bigger profits.\n00:09:42.330 Here is the business case for sustainability.\n00:09:45.330 From real life experience, costs are down, not up,\n00:09:49.330 reflecting some 400 million dollars\n00:09:51.330 of avoided costs in pursuit of zero waste --\n00:09:55.330 the first face of Mount Sustainability.\n00:09:58.330 This has paid all the costs for the transformation of Interface.\n00:10:02.330 And this dispels a myth too,\n00:10:04.330 this false choice between the environment and the economy.\n00:10:08.330 Our products are the best they've ever been,\n00:10:10.330 inspired by design for sustainability,\n00:10:12.330 an unexpected wellspring of innovation.\n00:10:16.330

Our people are galvanized around this shared higher purpose.\n00:10:19.330 You cannot beat it for attracting the best people\n00:10:21.330 and bringing them together.\n00:10:24.330 And the goodwill of the marketplace is astonishing.\n00:10:27.330 No amount of advertising, no clever marketing campaign,\n00:10:31.330 at any price, could have produced or created\n00:10:34.330 this much goodwill.\n00:10:37.330 Costs, products, people, marketplaces --\n00:10:39.330 what else is there?\n00:10:41.330 It is a better business model.\n00:10:43.330 And here is our 14-year record of sales and profits.\n00:10:48.330 There is a dip there, from 2001 to 2003:\n00:10:51.330 a dip when our sales, over a three-year period,\n00:10:53.330 were down 17 percent.\n00:10:55.330 But the marketplace was down 36 percent.\n00:10:58.330 We literally gained market share.\n00:11:00.330 We might not have survived that recession\n00:11:03.330 but for the advantages of sustainability.\n00:11:06.330 If every business were pursuing Interface plans,\n00:11:10.330 would that solve all our problems?\n00:11:12.330 I don't think so.\n00:11:14.330 I remain troubled by the revised Ehrlich equation,\n00:11:17.330 I equals P times A divided by T2.\n00:11:21.330 That A is a capital A,\n00:11:23.330 suggesting that affluence is an end in itself.\n00:11:28.330 But what if we reframed Ehrlich further?\n00:11:32.330 And what if we made A a lowercase 'a,'\n00:11:35.330 suggesting that it is a means to an end,\n00:11:37.330 and that end is happiness --\n00:11:40.330 more happiness with less stuff.\n00:11:43.330 You know that would reframe civilization itself --\n00:11:46.330 (Applause) --\n00:11:54.330 and our whole system of economics,\n00:11:57.330 if not for our species, then perhaps for the one that succeeds us:\n00:12:03.330 the sustainable species, living on a finite earth,\n00:12:06.330 ethically, happily and ecologically\n00:12:09.330 in balance with nature\n00:12:11.330 and all her natural systems for a thousand generations,\n00:12:14.330 or 10,000 generations --\n00:12:16.330 that is to say, into the indefinite future.\n00:12:19.330 But does the earth have to wait for our extinction as a species?\n00:12:24.330 Well maybe so. But I don't think so.\n00:12:27.330 At Interface we really intend to bring this prototypical\n00:12:30.330 sustainable, zero-footprint industrial company\n00:12:33.330 fully into existence by 2020.\n00:12:36.330 We can see our way now,\n00:12:38.330 clear to the top of that mountain.\n00:12:40.330 And now the challenge is in execution.\n00:12:43.330 And as my good friend and adviser Amory Lovins says,\n00:12:46.330 "If something exists, it must be possible."\n00:12:50.330 (Laughter)\n00:12:53.330 If we can actually do it, it must be possible.\n00:12:56.330 If we, a petro-intensive company can do it, anybody can.\n00:13:00.330 And if anybody can, it follows that everybody can.\n00:13:04.330 Hawken fulfilled business and industry,\n00:13:07.330 leading humankind away from the abyss\n00:13:11.330 because, with continued unchecked decline of the biosphere,\n00:13:16.330 a very dear person is at risk here --\n00:13:19.330 frankly, an unacceptable risk.\n00:13:21.330 Who is that person?\n00:13:23.330 Not you. Not I.\n00:13:25.330 But let me introduce you to the one who is most at risk here.\n00:13:28.330 And I myself met this person in the early days of this mountain climb.\n00:13:32.330 On a Tuesday morning in March of 1996,\n00:13:36.330 I was talking to people, as I did at every opportunity back then,\n00:13:39.330 bringing them along and often not knowing whether I was connecting.\n00:13:43.330 But about five days later back in Atlanta,\n00:13:46.330 I received an email from Glenn Thomas,\n00:13:49.330 one of my people in the California meeting.\n00:13:51.330 He was

sending me an original poem\n00:13:53.330 that he had composed after our Tuesday morning together.\n00:13:56.330 And when I read it it was one of the most uplifting moments of my life.\n00:14:00.330 Because it told me, by God, one person got it.\n00:14:04.330 Here is what Glenn wrote. And here is that person, most at risk.\n00:14:08.330 Please meet "Tomorrow's Child."\n00:14:12.330 "Without a name, an unseen face, and knowing not your time or place,\n00:14:16.330 Tomorrow's child, though yet unborn,\n00:14:19.330 I met you first last Tuesday morn.\n00:14:22.330 A wise friend introduced us two.\n00:14:24.330 And through his sobering point of view\n00:14:26.330 I saw a day that you would see, a day for you but not for me.\n00:14:31.330 Knowing you has changed my thinking.\n00:14:33.330 For I never had an inkling\n00:14:35.330 that perhaps the things I do might someday,\n00:14:38.330 somehow threaten you.\n00:14:41.330 Tomorrow's child, my daughter, son,\n00:14:43.330 I'm afraid I've just begun to think of you and of your good,\n00:14:45.330 though always having known I should.\n00:14:49.330 Begin, I will.\n00:14:51.330 The way the cost of what I squander, what is lost,\n00:14:54.330 if ever I forget that you\n00:14:56.330 will someday come and live here too."\n00:15:00.330 Well, every day of my life since,\n00:15:02.330 "Tomorrow's Child" has spoken to me\n00:15:04.330 with one simple but profound message,\n00:15:06.330 which I presume to share with you.\n00:15:08.330 We are, each and every one,\n00:15:10.330 a part of the web of life.\n00:15:13.330 The continuum of humanity, sure, but in a larger sense, the web of life itself.\n00:15:17.330 And we have a choice to make\n00:15:19.330 during our brief, brief visit\n00:15:21.330 to this beautiful blue and green living planet:\n00:15:25.330 to hurt it or to help it.\n00:15:28.330 For you, it's your call.\n00:15:31.330 Thank you.\n00:15:33.330 (Applause)\n", "extra": {"cited_message_idx": 28, "search_result_idx": null, "evidence_text": "source"}, "url": "file-CWgzJYsc2VMZ6yS9KoMxhOoC"}}, {"start_ix": 3867, "end_ix": 3878, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQv0sZY", "source": "my_files", "text": "\n\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen Haggard\n\nRegenesis\n\n\n\nCover Design: Wiley\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael Sotnikov, \nCheonggyecheong Festival; Courtesy of Playa Viva \u00a9 David Leventhal; Teachers \u00a9 Regenesis Group; \u00a9 Sasaki \nAssociates, Las Salinas Master Plan\n\nThis book is printed on acid-free paper. \n\nCopyright \u00a9 2016 by John Wiley & Sons, Inc. All rights reserved\n\nPublished by John Wiley & Sons, Inc., Hoboken, New Jersey\nPublished simultaneously in Canada\n\nNo part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any \nmeans, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section \n107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or \nauthorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood \nDrive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the web at www.copyright.com. Requests to \nthe Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River \nStreet, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at www.wiley.com/go/permissions.\n\nLimit of Liability/Disclaimer of Warranty: While the

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ecological design as the \n\n\nvi Foreword\n\n calibration of buildings with their places, which required further integral \nunderstanding of landscapes, energy flows, waste cycling, materials, sun-\nlight, water, and ecological processes. Ecological design, in other words, \naims to calibrate human actions with the way natural systems work as par-\nticular places, larger landscapes, and whole ecologies. It aims to work with, \nnot against, the flows of energy and natural cycling of materials. The goal, \nin short, was to reduce environmental impacts of the \u201cbuilt environment\u201d \nin a civilization that prized economic expansion above all else with hardly a \nthought for the morrow.\n\nWhat began so modestly in the 1970s has rapidly grown into a global move-\nment to harmonize buildings, neighborhoods, and cities with the surround-\ning nature. After the publication of the Brundtland Commission report in 1987, \nthe goals of ecological designers expanded to embrace the wider (but vague) \nmission of sustainability. But we know now that that word signifies more \nthan was once assumed. Sustainability is the sum total of other qualities. As \nChattanooga City Councilman, David Crockett puts it: \u201cmake it clean, green, \nsafe, and fair and it will be sustainable.\u201d The left side of that equation, how-\never, requires the elimination of the growing inequality that is a precursor to \n violence and ruined lives. It further requires rethinking our core assumptions \nabout the relation between economic growth and real progress. Ecological \ndesign, in other words, must be large enough in foresight, scope, and heart \nto include the social and economic environment in which it is embedded. In \nthat way ecological design is a radical endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2 Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular

place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of better possibilities, not just makers \nof buildings and things.\n\nA rapidly warming climate will add to the design challenges ahead. Design-\ners must reckon with a world of higher temperatures, stronger winds, more \nfrequent and larger storms, rising ocean levels, longer droughts, much larger \nrainfall events, and new diseases.7 These will likely cause interruptions in \nsupplies of food, energy, and water and could trigger social disruptions. We \nmust design with the awareness of the fragility of our civilization, as Jared \nDiamond and others warn. We must build in the ability to maintain hope and \nfunction as a society in emergency (and possibly breakdown) and lay the \nbasis for recovery.8\n\nThe Great Work of our generation is to create a post-fossil-fuel and post-\nconsumer economy that is regenerative, fair, durable, resilient, convivial, and \ndemocratic. It must be powered by renewable energy. It must be a circular \neconomy that recycles, reuses, or transforms its wastes. Of necessity it will be \nmuch more focused on essentials of food, energy, shelter, clean water, educa-\ntion, the arts, and rootedness in place and bioregion. It will be built by local \npeople who cherish and understand their places\nThe file is too long and its contents have been truncated.\n", "extra": {"cited_message_idx": 30, "search_result_idx": null, "evidence_text": "source"}, "url": "file-RAzDllTYQLyhHItDOsQvOsZY"}}, {"start_ix": 4281, "end_ix": 4292, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQvOsZY", "source": "my_files", "text": "\n\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen Haggard\n\nRegenesis\n\n\n\nCover Design: Wiley\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael Sotnikov, \nCheonggyecheong Festival; Courtesy of Playa Viva \u00a9 David Leventhal; Teachers \u00a9 Regenesis Group; \u00a9 Sasaki \nAssociates, Las Salinas Master Plan\n\nThis book is printed on acid-free paper. \n\nCopyright \u00a9 2016 by John Wiley & Sons, Inc. All rights reserved\n\nPublished by John Wiley & Sons, Inc.,

Hoboken, New Jersey\nPublished simultaneously in Canada\n\n\n\nLibrary of Congress Cataloging-in-Publication Data: \n\n9781118972861 (pbk); 978-1-118-97291-5 (ebk);\n978-1-118-97292-2 (ebk); 978-1-119-14969-9 (ebk)\n\nPrinted in the United States of America\n\n10 9 8 7 6 5 4 3 2 1\n\nhttp://www.copyright.com\nhttp://www.wiley.com/go/permissions\nhttp://booksupport.wiley.com\nhttp://www.wiley.com\n\n\niii\n\nContents\n\n

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tamed a bit before it \ncould be appreciated.\n\nDesigners, however, typically do not work at the macro scale of civilization \nfor good reasons. Whether as architecture, engineering, materials, or land-\nscapes, design is bounded by the minute particulars of projects in their spe-\ncific social, cultural, and historical context. As a result designers work from the \nbottom up on projects at the building, neighborhood, and city scales. But the \nbig problems mentioned above are in large part the sum total of bad design \n(including that of public policies) at lower levels. There are many reasons for \nbad design, not the least of which is a professional focus on form-making, \noften oblivious to other consequences.\n\nBeginning in the 1970s a few renegade architects like Sim Van der Ryn in \nCalifornia became concerned about the collateral environmental impacts \nof the design professions. Van der Ryn envisioned ecological design as the \n\n\nvi Foreword\n\n calibration of buildings with their places, which required further integral \nunderstanding of landscapes, energy flows, waste cycling, materials, sun-\nlight, water, and ecological processes. Ecological design, in other words, \naims to calibrate human actions with the way natural systems work as par-\nticular places, larger landscapes, and whole ecologies. It aims to work with, \nnot against, the flows of energy and natural cycling of materials. The goal, \nin short, was to reduce environmental impacts of the \u201cbuilt environment\u201d \nin a civilization that prized economic expansion above all else with hardly a \nthought for the morrow.\n\nWhat began so modestly in the 1970s has rapidly grown into a global move-\nment to harmonize buildings, neighborhoods, and cities with the surround-\ning nature. After the publication of the Brundtland Commission report in 1987, \nthe goals of ecological designers expanded to embrace the wider (but vague) \nmission of sustainability. But we know now that that word signifies more \nthan was once assumed. Sustainability is the sum total of other qualities. As \nChattanooga City Councilman, David Crockett puts it: \u201cmake it clean, green, \nsafe, and fair and it will be sustainable.\u201d The left side of that equation, how-\never, requires the elimination of the growing inequality that is a precursor to \n violence and ruined lives. It further requires rethinking our core assumptions \nabout the relation between economic growth and real progress. Ecological \ndesign, in other words, must be large enough in foresight, scope, and heart \nto include the social and economic environment in which it is embedded. In \nthat way ecological design is a radical endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2

Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of better possibilities, not just makers \nof buildings and things.\n\nA rapidly warming climate will add to the design challenges ahead. Design-\ners must reckon with a world of higher temperatures, stronger winds, more \nfrequent and larger storms, rising ocean levels, longer droughts, much larger \nrainfall events, and new diseases.7 These will likely cause interruptions in \nsupplies of food, energy, and water and could trigger social disruptions. We \nmust design with the awareness of the fragility of our civilization, as Jared \nDiamond and others warn. We must build in the ability to maintain hope and \nfunction as a society in emergency (and possibly breakdown) and lay the \nbasis for recovery.8\n\nThe Great Work of our generation is to create a post-fossil-fuel and post-\nconsumer economy that is regenerative, fair, durable, resilient, convivial, and \ndemocratic. It must be powered by renewable energy. It must be a circular \neconomy that recycles, reuses, or transforms its wastes. Of necessity it will be \nmuch more focused on essentials of food, energy, shelter, clean water, educa-\ntion, the arts, and rootedness in place and bioregion. It will be built by local \npeople who cherish and understand their places\nThe file is too long and its contents have been truncated.\n", "extra": {"cited_message_idx": 30, "search_result_idx": null, "evidence_text": "source"}, "url": "file-

RAzDllTYQLyhHItDOsQvOsZY"}}, {"start_ix": 4807, "end_ix": 4818, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "tactiq-free-transcript-IoRjz8iTVoo.txt", "id": "file-O15fyq55A9kPiWRmfng811x4", "source": "my_files", "text": "# tactiq.io free youtube transcript\n# Cradle to cradle design | William McDonough\n# https://www.youtube.com/watch/IoRjz8iTVoo\n\n00:00:26.000 In 1962, with Rachel Carson's "Silent Spring,"\n00:00:30.000 I think for people like me in the world of the making of things,\n00:00:35.000 the canary in the mine wasn't singing.\n00:00:39.000 And so the question that we might not have birds\n00:00:42.000 became kind of fundamental to those of us wandering around\n00:00:45.000 looking for the meadowlarks that seemed to have all disappeared.\n00:00:48.000 And the question was, were the birds singing?\n00:00:51.000 Now, I'm not a scientist, that'll be really clear.\n00:00:55.000 But, you know, we've just come from this discussion of what a bird might be.\n00:00:59.000 What is a bird?\n00:01:00.000 Well, in my world, this is a rubber duck.\n00:01:04.000 It comes in California with a warning --\n00:01:06.000 "This product contains chemicals known by the State of California\n00:01:09.000 to cause cancer and birth defects or other reproductive harm."\n00:01:16.000 This is a bird.\n00:01:19.000 What kind of culture would produce a product of this kind\n00:01:22.000 and then label it and sell it to children?\n00:01:27.000 I think we have a design problem.\n00:01:30.000 Someone heard the six hours of talk that I gave\n00:01:35.000 called "The Monticello Dialogues" on NPR, and sent me this as a thank you note --\n00:01:41.000 "We realize that design is a signal of intention,\n00:01:43.000 but it also has to occur within a world,\n00:01:46.000 and we have to understand that world in order to\n00:01:50.000 imbue our designs with inherent intelligence,\n00:01:53.000 and so as we look back at the basic state of affairs\n00:01:58.000 in which we design, we, in a way, need to go to the primordial condition\n00:02:03.000 to understand the operating system and the frame conditions of a planet,\n00:02:08.000 and I think the exciting part of that is the good news that's there,\n00:02:13.000 because the news is the news of abundance,\n00:02:16.000 and not the news of limits,\n00:02:18.000 and I think as our culture tortures itself now\n00:02:23.000 with tyrannies and concerns over limits and fear,\n00:02:28.000 we can add this other dimension of abundance that is coherent,\n00:02:33.000 driven by the sun, and start to imagine\n00:02:35.000 what that would be like to share."\n00:02:42.000 That was a nice thing to get.\n00:02:44.000 That was one sentence.\n00:02:48.000 Henry James would be proud.\n00:02:50.000 This is -- I put it down at the bottom,\n00:02:52.000 but that was extemporaneous, obviously.\n00:02:55.000 The fundamental issue is that, for me,\n00:02:58.000 design is the first signal of human intentions.\n00:03:00.000 So what are our intentions, and what would our intentions be --\n00:03:04.000 if we wake up in the morning, we have designs on the world --\n00:03:07.000 well, what would our intention be as a species\n00:03:09.000 now that we're the dominant species?\n00:03:11.000 And it's not just stewardship and dominion debate,\n00:03:14.000 because really, dominion is implicit in stewardship --\n00:03:20.000 because how could you dominate something you had killed?\n00:03:22.000 And stewardship's implicit in dominion,\n00:03:24.000 because you can't be steward of something if you can't dominate it.\n00:03:26.000 So the question is, what is the first question for designers?\n00:03:32.000 Now, as guardians -- let's say the state, for example,\n00:03:35.000 which reserves the right to kill, the right to be duplicitous and so on --\n00:03:40.000 the question we're asking the guardian at this point is\n00:03:43.000 are we meant, how are we

meant,\n00:03:45.000 to secure local societies, create world peace\n00:03:47.000 and save the environment?\n00:03:49.000 But I don't know that that's the common debate.\n00:03:52.000 Commerce, on the other hand, is relatively quick,\n00:03:56.000 essentially creative, highly effective and efficient,\n00:03:58.000 and fundamentally honest, because we can't exchange\n00:04:01.000 value for very long if we don't trust each other.\n00:04:05.000 So we use the tools of commerce primarily for our work,\n00:04:07.000 but the question we bring to it is,\n00:04:09.000 how do we love all the children of all species for all time?\n00:04:13.000 And so we start our designs with that question.\n00:04:16.000 Because what we realize today is that modern culture\n00:04:18.000 appears to have adopted a strategy of tragedy.\n00:04:21.000 If we come here and say, "Well, I didn't intend\n00:04:23.000 to cause global warming on the way here,"\n00:04:24.000 and we say, "That's not part of my plan,"\n00:04:26.000 then we realize it's part of our de facto plan.\n00:04:29.000 Because it's the thing that's happening because we have no other plan.\n00:04:32.000 And I was at the White House for President Bush,\n00:04:34.000 meeting with every federal department and agency,\n00:04:36.000 and I pointed out that they appear to have no plan.\n00:04:40.000 If the end game is global warming, they're doing great.\n00:04:42.000 If the end game is mercury toxification of our children\n00:04:45.000 downwind of coal fire plants as they scuttled the Clean Air Act,\n00:04:48.000 then I see that our education programs should be explicitly defined as,\n00:04:52.000 "Brain death for all children. No child left behind."\n00:04:54.000 (Applause)\n00:04:58.000 So, the question is, how many federal officials\n00:05:02.000 are ready to move to Ohio and Pennsylvania with their families?\n00:05:05.000 So if you don't have an endgame of something delightful,\n00:05:09.000 then you're just moving chess pieces around,\n00:05:11.000 if you don't know you're taking the king.\n00:05:12.000 So perhaps we could develop a strategy of change,\n00:05:15.000 which requires humility. And in my business as an architect,\n00:05:18.000 it's unfortunate the word "humility" and the word "architect"\n00:05:22.000 have not appeared in the same paragraph since "The Fountainhead."\n00:05:25.000 So if anybody here has trouble with the concept of design humility,\n00:05:30.000 reflect on this -- it took us 5,000 years\n00:05:33.000 to put wheels on our luggage.\n00:05:37.000 So, as Kevin Kelly pointed out, there is no endgame.\n00:05:42.000 There is an infinite game, and we're playing in that infinite game.\n00:05:46.000 And so we call it "cradle to cradle,"\n00:05:48.000 and our goal is very simple.\n00:05:49.000 This is what I presented to the White House.\n00:05:51.000 Our goal is a delightfully diverse, safe, healthy and just world,\n00:05:54.000 with clean air, clean water, soil and power --\n00:05:57.000 economically, equitably, ecologically and elegantly enjoyed, period.\n00:06:01.000 (Applause)\n00:06:04.000 What don't you like about this?\n00:06:07.000 Which part of this don't you like?\n00:06:09.000 So we realized we want full diversity,\n00:06:11.000 even though it can be difficult to remember what De Gaulle said\n00:06:14.000 when asked what it was like to be President of France.\n00:06:16.000 He said, "What do you think it's like trying to run a country with 400 kinds of cheese?"\n00:06:20.000 But at the same time, we realize that our products are not safe and healthy.\n00:06:23.000 So we've designed products\n00:06:25.000 and we analyzed chemicals down to the parts per million.\n00:06:27.000 This is a baby blanket by Pendleton that will give your child

nutrition\n00:06:30.000 instead of Alzheimer's later in life.\n00:06:32.000 We can ask ourselves, what is justice,\n00:06:34.000 and is justice blind, or is justice blindness?\n00:06:38.000 And at what point did that uniform turn from white to black?\n00:06:43.000 Water has been declared a human right by the United Nations.\n00:06:46.000 Air quality is an obvious thing to anyone who breathes.\n00:06:48.000 Is there anybody here who doesn't breathe?\n00:06:51.000 Clean soil is a critical problem -- the nitrification, the dead zones\n00:06:54.000 in the Gulf of Mexico.\n00:06:56.000 A fundamental issue that's not being addressed.\n00:06:58.000 We've seen the first form of solar energy\n00:07:00.000 that's beat the hegemony of fossil fuels in the form of wind\n00:07:03.000 here in the Great Plains, and so that hegemony is leaving.\n00:07:06.000 And if we remember Sheikh Yamani when he formed OPEC,\n00:07:09.000 they asked him, "When will we see the end of the age of oil?"\n00:07:12.000 I don't know if you remember his answer, but it was,\n00:07:15.000 "The Stone Age didn't end because we ran out of stones."\n00:07:19.000 We see that companies acting ethically in this world\n00:07:23.000 are outperforming those that don't.\n00:07:24.000 We see the flows of materials in a rather terrifying prospect.\n00:07:29.000 This is a hospital monitor from Los Angeles, sent to China.\n00:07:32.000 This woman will expose herself to toxic phosphorous,\n00:07:35.000 release four pounds of toxic lead into her childrens' environment,\n00:07:38.000 which is from copper.\n00:07:40.000 On the other hand, we see great signs of hope.\n00:07:42.000 Here's Dr. Venkataswamy in India, who's figured out\n00:07:45.000 how to do mass-produced health.\n00:07:47.000 He has given eyesight to two million people for free.\n00:07:51.000 We see in our material flows that car steels don't become car steel again\n00:07:54.000 because of the contaminants of the coatings --\n00:07:56.000 bismuth, antimony, copper and so on.\n00:07:58.000 They become building steel.\n00:07:59.000 On the other hand, we're working with Berkshire Hathaway,\n00:08:01.000 Warren Buffett and Shaw Carpet,\n00:08:04.000 the largest carpet company in the world.\n00:08:05.000 We've developed a carpet that is continuously recyclable,\n00:08:08.000 down to the parts per million.\n00:08:11.000 The upper is Nylon 6 that can go back to caprolactam,\n00:08:14.000 the bottom, a polyolephine -- infinitely recyclable thermoplastic.\n00:08:17.000 Now if I was a bird, the building on my left is a liability.\n00:08:21.000 The building on my right, which is our corporate campus for The Gap\n00:08:24.000 with an ancient meadow, is an asset -- its nesting grounds.\n00:08:29.000 Here's where I come from. I grew up in Hong Kong,\n00:08:31.000 with six million people in 40 square miles.\n00:08:33.000 During the dry season, we had four hours of water every fourth day.\n00:08:37.000 And the relationship to landscape was that of farmers who have been\n00:08:40.000 farming the same piece of ground for 40 centuries.\n00:08:44.000 You can't farm the same piece of ground for 40 centuries\n00:08:46.000 without understanding nutrient flow.\n00:08:49.000 My childhood summers were in the Puget Sound of Washington,\n00:08:52.000 among the first growth and big growth.\n00:08:54.000 My grandfather had been a lumberjack in the Olympics,\n00:08:56.000 so I have a lot of tree karma I am working off.\n00:09:01.000 I went to Yale for graduate school,\n00:09:03.000 studied in a building of this style by Le Corbusier,\n00:09:05.000 affectionately known in our business as Brutalism.\n00:09:09.000 If we look at the world of architecture,\n00:09:12.000 we see with Mies' 1928 tower for Berlin,\n00:09:15.000 the question might be, "Well, where's the sun?"\n00:09:17.000 And this might have worked in Berlin, but we

built it in Houston,\n00:09:20.000 and the windows are all closed. And with most products\n00:09:23.000 appearing not to have been designed for indoor use,\n00:09:25.000 this is actually a vertical gas chamber.\n00:09:28.000 When I went to Yale, we had the first energy crisis,\n00:09:31.000 and I was designing the first solar-heated house in Ireland\n00:09:33.000 as a student, which I then built -- \n00:09:35.000 which would give you a sense of my ambition.\n00:09:37.000 And Richard Meier, who was one of my teachers,\n00:09:39.000 kept coming over to my desk to give me criticism,\n00:09:41.000 and he would say, "Bill, you've got to understand- --\n00:09:43.000 solar energy has nothing to do with architecture."\n00:09:51.000 I guess he didn't read Vitruvius.\n00:09:53.000 In 1984, we did the first so-called "green office" in America\n00:09:57.000 for Environmental Defense.\n00:09:58.000 We started asking manufacturers what were in their materials.\n00:10:01.000 They said, "They're proprietary, they're legal, go away."\n00:10:03.000 The only indoor quality work done in this country at that time\n00:10:05.000 was sponsored by R.J. Reynolds Tobacco Company,\n00:10:08.000 and it was to prove there was no danger\n00:10:09.000 from secondhand smoke in the workplace.\n00:10:12.000 So, all of a sudden, here I am, graduating from high school in 1969,\n00:10:16.000 and this happens, and we realize that "away" went away.\n00:10:19.000 Remember we used to throw things away, and we'd point to away?\n00:10:23.000 And yet, NOAA has now shown us, for example --\n00:10:25.000 you see that little blue thing above Hawaii?\n00:10:27.000 That's the Pacific Gyre.\n00:10:28.000 It was recently dragged for plankton by scientists,\n00:10:30.000 and they found six times as much plastic as plankton.\n00:10:34.000 When asked, they said, "It's kind of like a giant toilet that doesn't flush."\n00:10:39.000 Perhaps that's away.\n00:10:40.000 So we're looking for the design rules of this -- \n00:10:42.000 this is the highest biodiversity of trees in the world, Irian Jaya,\n00:10:44.000 259 species of tree, and we described this\n00:10:48.000 in the book, "Cradle to Cradle."\n00:10:49.000 The book itself is a polymer. It is not a tree.\n00:10:53.000 That's the name of the first chapter -- "This Book is Not a Tree."\n00:10:56.000 Because in poetics, as Margaret Atwood pointed out,\n00:10:59.000 "we write our history on the skin of fish\n00:11:01.000 with the blood of bears."\n00:11:04.000 And with so much polymer, what we really need\n00:11:05.000 is technical nutrition, and to use something\n00:11:08.000 as elegant as a tree -- imagine this design assignment:\n00:11:11.000 Design something that makes oxygen, sequesters carbon,\n00:11:13.000 fixes nitrogen, distills water, accrues solar energy as fuel,\n00:11:17.000 makes complex sugars and food, creates microclimates,\n00:11:21.000 changes colors with the seasons and self-replicates.\n00:11:27.000 Well, why don't we knock that down and write on it?\n00:11:29.000 (Laughter)\n00:11:35.000 So, we're looking at the same criteria\n00:11:37.000 as most people -- you know, can I afford it?\n00:11:39.000 Does it work? Do I like it?\n00:11:41.000 We're adding the Jeffersonian agenda, and I come from Charlottesville,\n00:11:43.000 where I've had the privilege of living in a house designed by Thomas Jefferson.\n00:11:47.000 We're adding life, liberty and the pursuit of happiness.\n00:11:53.000 Now if we look at the word "competition,"\n00:11:54.000 I'm sure most of you've used it.\n00:11:56.000 You know, most people don't realize it comes from\n00:11:57.000 the Latin competere, which means strive together.\n00:12:00.000 It means the way Olympic athletes train with each other.\n00:12:03.000 They get fit together, and then

they compete.\n00:12:06.000 The Williams sisters compete -- one wins Wimbledon.\n00:12:08.000 So we've been looking at the idea of competition\n00:12:11.000 as a way of cooperating in order to get fit together.\n00:12:15.000 And the Chinese government has now --\n00:12:16.000 I work with the Chinese government now --\n00:12:18.000 has taken this up.\n00:12:20.000 We're also looking at survival of the fittest,\n00:12:22.000 not in just competition terms in our modern context\n00:12:24.000 of destroy the other or beat them to the ground,\n00:12:27.000 but really to fit together and build niches\n00:12:29.000 and have growth that is good.\n00:12:31.000 Now most environmentalists don't say growth is good,\n00:12:33.000 because, in our lexicon, asphalt is two words: assigning blame.\n00:12:38.000 But if we look at asphalt as our growth,\n00:12:41.000 then we realize that all we're doing is destroying\n00:12:43.000 the planetary's fundamental underlying operating system.\n00:12:47.000 So when we see E equals mc squared come along, from a poet's perspective,\n00:12:52.000 we see energy as physics, chemistry as mass,\n00:12:54.000 and all of a sudden, you get this biology.\n00:12:56.000 And we have plenty of energy, so we'll solve that problem,\n00:12:59.000 but the biology problem's tricky, because as we put through\n00:13:02.000 all these toxic materials that we disgorge,\n00:13:05.000 we will never be able to recover that.\n00:13:07.000 And as Francis Crick pointed out, nine years\n00:13:09.000 after discovering DNA with Mr. Watson,\n00:13:12.000 that life itself has to have growth as a precondition --\n00:13:16.000 it has to have free energy, sunlight\n00:13:18.000 and it needs to be an open system of chemicals.\n00:13:21.000 So we're asking for human artifice to become a living thing,\n00:13:24.000 and we want growth, we want free energy from sunlight\n00:13:26.000 and we want an open metabolism for chemicals.\n00:13:29.000 Then, the question becomes not growth or no growth,\n00:13:31.000 but what do you want to grow?\n00:13:34.000 So instead of just growing destruction,\n00:13:36.000 we want to grow the things that we might enjoy,\n00:13:38.000 and someday the FDA will allow us to make French cheese.\n00:13:41.000 So therefore, we have these two metabolisms,\n00:13:45.000 and I worked with a German chemist, Michael Braungart,\n00:13:47.000 and we've identified the two fundamental metabolisms.\n00:13:49.000 The biological one I'm sure you understand,\n00:13:51.000 but also the technical one, where we take materials\n00:13:53.000 and put them into closed cycles.\n00:13:55.000 We call them biological nutrition and technical nutrition.\n00:13:58.000 Technical nutrition will be in an order of magnitude of biological nutrition.\n00:14:02.000 Biological nutrition can supply about 500 million humans,\n00:14:05.000 which means that if we all wore Birkenstocks and cotton,\n00:14:07.000 the world would run out of cork and dry up.\n00:14:10.000 So we need materials in closed cycles,\n00:14:12.000 but we need to analyze them down to the parts per million\n00:14:14.000 for cancer, birth defects, mutagenic effects,\n00:14:17.000 disruption of our immune systems, biodegradation, persistence,\n00:14:20.000 heavy metal content, knowledge of how we're making them\n00:14:23.000 and their production and so on.\n00:14:25.000 Our first product was a textile where we analyzed 8,000 chemicals\n00:14:29.000 in the textile industry.\n00:14:30.000 Using those intellectual filters, we eliminated [7,962.]\n00:14:35.000 We were left with 38 chemicals.\n00:14:37.000 We have since databased the 4000 most commonly used chemicals\n00:14:40.000 in human manufacturing, and we're releasing this database into the public in six weeks.\n00:14:45.000 So designers all over the world can analyze their products\n00:14:47.000 down to the

parts per million for human and ecological health.\n00:14:52.000 (Applause)\n00:14:57.000 We've developed a protocol so that companies can send\n00:15:00.000 these same messages all the way through their supply chains,\n00:15:03.000 because when we asked most companies we work with -- about a trillion dollars\n00:15:06.000 -- and say, "Where does your stuff come from?" They say, "Suppliers."\n00:15:08.000 "And where does it go?"\n00:15:10.000 "Customers."\n00:15:11.000 So we need some help there.\n00:15:12.000 So the biological nutrients, the first fabrics --\n00:15:14.000 the water coming out was clean enough to drink.\n00:15:16.000 Technical nutrients -- this is for Shaw Carpet, infinitely reusable carpet.\n00:15:20.000 Here's nylon going back to caprolactam back to carpet.\n00:15:23.000 Biotechnical nutrients -- the Model U for Ford Motor,\n00:15:26.000 a cradle to cradle car -- concept car.\n00:15:28.000 Shoes for Nike, where the uppers are polyesters, infinitely recyclable,\n00:15:32.000 the bottoms are biodegradable soles.\n00:15:35.000 Wear your old shoes in, your new shoes out.\n00:15:37.000 There is no finish line.\n00:15:39.000 The idea here of the car is that some of the materials\n00:15:41.000 go back to the industry forever, some of the materials go back to soil --\n00:15:44.000 it's all solar-powered.\n00:15:46.000 Here's a building at Oberlin College we designed\n00:15:48.000 that makes more energy than it needs to operate and purifies its own water.\n00:15:52.000 Here's a building for The Gap, where the ancient grasses\n00:15:54.000 of San Bruno, California, are on the roof.\n00:15:58.000 And this is our project for Ford Motor Company.\n00:16:00.000 It's the revitalization of the River Rouge in Dearborn.\n00:16:02.000 This is obviously a color photograph.\n00:16:06.000 These are our tools. These are how we sold it to Ford.\n00:16:10.000 We saved Ford 35 million dollars doing it this way, day one,\n00:16:13.000 which is the equivalent of the Ford Taurus\n00:16:15.000 at a four percent margin of an order for 900 million dollars worth of cars.\n00:16:19.000 Here it is. It's the world's largest green roof, 10 and a half acres.\n00:16:22.000 This is the roof, saving money,\n00:16:25.000 and this is the first species to arrive here. These are killdeer.\n00:16:29.000 They showed up in five days.\n00:16:32.000 And we now have 350-pound auto workers\n00:16:34.000 learning bird songs on the Internet.\n00:16:38.000 We're developing now protocols for cities --\n00:16:40.000 that's the home of technical nutrients.\n00:16:42.000 The country -- the home of biological. And putting them together.\n00:16:45.000 And so I will finish by showing you a new city\n00:16:47.000 we're designing for the Chinese government.\n00:16:49.000 We're doing 12 cities for China right now,\n00:16:52.000 based on cradle to cradle as templates.\n00:16:54.000 Our assignment is to develop protocols for the housing\n00:16:57.000 for 400 million people in 12 years.\n00:16:59.000 We did a mass energy balance -- if they use brick,\n00:17:01.000 they will lose all their soil and burn all their coal.\n00:17:04.000 They'll have cities with no energy and no food.\n00:17:06.000 We signed a Memorandum of Understanding --\n00:17:08.000 here's Madam Deng Nan, Deng Xiaoping's daughter --\n00:17:10.000 for China to adopt cradle to cradle.\n00:17:12.000 Because if they toxify themselves, being the lowest-cost producer,\n00:17:16.000 send it to the lowest-cost distribution -- Wal-Mart --\n00:17:18.000 and then we send them all our money, what we'll discover is that\n00:17:21.000 we have what, effectively, when I was a student,\n00:17:24.000 was called mutually assured destruction.\n00:17:27.000 Now we do it by molecule. These are our cities.\n00:17:30.000 We're building a new city next to this city; look at

that landscape.\n00:17:33.000 This is the site.\n00:17:35.000 We don't normally do green fields, but this one is about to be built,\n00:17:39.000 so they brought us in to intercede.\n00:17:41.000 This is their plan.\n00:17:43.000 It's a rubber stamp grid that they laid right on that landscape.\n00:17:46.000 And they brought us in and said, "What would you do?"\n00:17:49.000 This is what they would end up with, which is another color photograph.\n00:17:53.000 So this is the existing site, so this is what it looks like now,\n00:17:56.000 and here's our proposal.\n00:17:58.000 (Applause)\n00:18:02.000 So the way we approached this\n00:18:04.000 is we studied the hydrology very carefully.\n00:18:06.000 We studied the biota, the ancient biota,\n00:18:08.000 the current farming and the protocols.\n00:18:10.000 We studied the winds and the sun to make sure everybody in the city\n00:18:12.000 will have fresh air, fresh water and direct sunlight\n00:18:18.000 in every single apartment at some point during the day.\n00:18:21.000 We then take the parks and lay them out as ecological infrastructure.\n00:18:25.000 We lay out the building areas.\n00:18:28.000 We start to integrate commercial and mixed use\n00:18:29.000 so the people all have centers and places to be.\n00:18:32.000 The transportation is all very simple,\n00:18:34.000 everybody's within a five-minute walk of mobility.\n00:18:37.000 We have a 24-hour street, so that there's always a place that's alive.\n00:18:42.000 The waste systems all connect.\n00:18:44.000 If you flush a toilet, your feces will go to the sewage treatment plants,\n00:18:49.000 which are sold as assets, not liabilities.\n00:18:51.000 Because who wants the fertilizer factory that makes natural gas?\n00:18:55.000 The waters are all taken in to construct the wetlands for habitat restorations.\n00:19:00.000 And then it makes natural gas, which then goes back into the city\n00:19:04.000 to power the fuel for the cooking for the city.\n00:19:08.000 So this is -- these are fertilizer gas plants.\n00:19:10.000 And then the compost is all taken back\n00:19:13.000 to the roofs of the city, where we've got farming,\n00:19:15.000 because what we've done is lifted up the city,\n00:19:19.000 the landscape, into the air to -- to restore the native landscape\n00:19:26.000 on the roofs of the buildings.\n00:19:28.000 The solar power of all the factory centers\n00:19:31.000 and all the industrial zones with their light roofs powers the city.\n00:19:34.000 And this is the concept for the top of the city.\n00:19:36.000 We've lifted the earth up onto the roofs.\n00:19:40.000 The farmers have little bridges to get from one roof to the next.\n00:19:44.000 We inhabit the city with work/live space on all the ground floors.\n00:19:48.000 And so this is the existing city, and this is the new city.\n00:19:53.000 (Applause)\n", "extra": {"cited_message_idx": 29, "search_result_idx": null, "evidence_text": "source"}, "url": "file-O15fyq55A9kPiWRmfng811x4"}}, {"start_ix": 4818, "end_ix": 4829, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQvOsZY", "source": "my_files", "text": "\n\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen Haggard\n\nRegenesis\n\n\n\nCover Design: Wiley\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael Sotnikov, \nCheonggyecheong Festival; Courtesy of Playa Viva \u00a9 David Leventhal; Teachers \u00a9 Regenesis Group; \u00a9 Sasaki \nAssociates, Las Salinas Master Plan\n\nThis book is printed on acid-free paper. \n\nCopyright \u00a9 2016 by John Wiley & Sons, Inc. All rights reserved\n\nPublished by John Wiley & Sons, Inc.,

Hoboken, New Jersey\nPublished simultaneously in Canada\n\n\n\nLibrary of Congress Cataloging-in-Publication Data: \n\n9781118972861 (pbk); 978-1-118-97291-5 (ebk);\n978-1-118-97292-2 (ebk); 978-1-119-14969-9 (ebk)\n\nPrinted in the United States of America\n\n10 9 8 7 6 5 4 3 2 1\n\nhttp://www.copyright.com\nhttp://www.wiley.com/go/permissions\nhttp://booksupport.wiley.com\nhttp://www.wiley.com\n\n\niii\n\nContents\n\n

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tamed a bit before it \ncould be appreciated.\n\nDesigners, however, typically do not work at the macro scale of civilization \nfor good reasons. Whether as architecture, engineering, materials, or land-\nscapes, design is bounded by the minute particulars of projects in their spe-\ncific social, cultural, and historical context. As a result designers work from the \nbottom up on projects at the building, neighborhood, and city scales. But the \nbig problems mentioned above are in large part the sum total of bad design \n(including that of public policies) at lower levels. There are many reasons for \nbad design, not the least of which is a professional focus on form-making, \noften oblivious to other consequences.\n\nBeginning in the 1970s a few renegade architects like Sim Van der Ryn in \nCalifornia became concerned about the collateral environmental impacts \nof the design professions. Van der Ryn envisioned ecological design as the \n\n\nvi Foreword\n\n calibration of buildings with their places, which required further integral \nunderstanding of landscapes, energy flows, waste cycling, materials, sun-\nlight, water, and ecological processes. Ecological design, in other words, \naims to calibrate human actions with the way natural systems work as par-\nticular places, larger landscapes, and whole ecologies. It aims to work with, \nnot against, the flows of energy and natural cycling of materials. The goal, \nin short, was to reduce environmental impacts of the \u201cbuilt environment\u201d \nin a civilization that prized economic expansion above all else with hardly a \nthought for the morrow.\n\nWhat began so modestly in the 1970s has rapidly grown into a global move-\nment to harmonize buildings, neighborhoods, and cities with the surround-\ning nature. After the publication of the Brundtland Commission report in 1987, \nthe goals of ecological designers expanded to embrace the wider (but vague) \nmission of sustainability. But we know now that that word signifies more \nthan was once assumed. Sustainability is the sum total of other qualities. As \nChattanooga City Councilman, David Crockett puts it: \u201cmake it clean, green, \nsafe, and fair and it will be sustainable.\u201d The left side of that equation, how-\never, requires the elimination of the growing inequality that is a precursor to \n violence and ruined lives. It further requires rethinking our core assumptions \nabout the relation between economic growth and real progress. Ecological \ndesign, in other words, must be large enough in foresight, scope, and heart \nto include the social and economic environment in which it is embedded. In \nthat way ecological design is a radical endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2

Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of better possibilities, not just makers \nof buildings and things.\n\nA rapidly warming climate will add to the design challenges ahead. Design-\ners must reckon with a world of higher temperatures, stronger winds, more \nfrequent and larger storms, rising ocean levels, longer droughts, much larger \nrainfall events, and new diseases.7 These will likely cause interruptions in \nsupplies of food, energy, and water and could trigger social disruptions. We \nmust design with the awareness of the fragility of our civilization, as Jared \nDiamond and others warn. We must build in the ability to maintain hope and \nfunction as a society in emergency (and possibly breakdown) and lay the \nbasis for recovery.8\n\nThe Great Work of our generation is to create a post-fossil-fuel and post-\nconsumer economy that is regenerative, fair, durable, resilient, convivial, and \ndemocratic. It must be powered by renewable energy. It must be a circular \neconomy that recycles, reuses, or transforms its wastes. Of necessity it will be \nmuch more focused on essentials of food, energy, shelter, clean water, educa-\ntion, the arts, and rootedness in place and bioregion. It will be built by local \npeople who cherish and understand their places\nThe file is too long and its contents have been truncated.\n", "extra": {"cited_message_idx": 30, "search_result_idx": null, "evidence_text": "source"}, "url": "file-

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children's future would someday be a crime.\n00:03:13.330 But I realized, for that to be true --\n00:03:15.330 for theft of our children's future to be a crime --\n00:03:18.330 there must be a clear, demonstrable alternative\n00:03:21.330 to the take-make-waste industrial system\n00:03:24.330 that so dominates our civilization,\n00:03:27.330 and is the major culprit, stealing our children's future,\n00:03:30.330 by digging up the earth\n00:03:32.330 and converting it to products that quickly become waste\n00:03:36.330 in a landfill or an incinerator --\n00:03:38.330 in short, digging up the earth and converting it to pollution.\n00:03:43.330 According to Paul and Anne Ehrlich\n00:03:45.330 and a well-known environmental impact equation,\n00:03:48.330 impact -- a bad thing --\n00:03:50.330 is the product of population, affluence and technology.\n00:03:54.330 That is, impact is generated by people,\n00:03:58.330 what they consume in their affluence,\n00:04:00.330 and how it is produced.\n00:04:03.330 And though the equation is largely subjective,\n00:04:05.330 you can perhaps quantify people, and perhaps quantify affluence,\n00:04:09.330 but technology is abusive in too many ways to quantify.\n00:04:13.330 So the equation is conceptual.\n00:04:15.330 Still it works to help us understand the problem.\n00:04:18.329 So we set out at Interface, in 1994,\n00:04:23.330 to create an example:\n00:04:25.330 to transform the way we made carpet,\n00:04:27.330 a petroleum-intensive product for materials as well as energy,\n00:04:31.330 and to transform our technologies\n00:04:33.330 so they diminished environmental impact,\n00:04:36.330 rather than multiplied it.\n00:04:39.330 Paul and Anne Ehrlich's environmental impact equation:\n00:04:42.330 I is equal to P times A times T:\n00:04:45.330 population, affluence and technology.\n00:04:48.330 I wanted Interface to rewrite that equation so that it read\n00:04:54.330 I equals P times A divided by T.\n00:04:57.330 Now, the mathematically-minded will see immediately\n00:05:00.330 that T in the numerator increases impact -- a bad thing --\n00:05:03.330 but T in the denominator decreases impact.\n00:05:07.330 So I ask, "What would move T, technology,\n00:05:11.330 from the numerator -- call it T1 --\n00:05:13.330 where it increases impact,\n00:05:15.330 to the denominator -- call it T2 --\n00:05:18.330 where it reduces impact?\n00:05:21.330 I thought about the characteristics\n00:05:25.330 of first industrial revolution,\n00:05:27.330 T1, as we practiced it at Interface,\n00:05:30.330 and it had the following characteristics.\n00:05:34.330 Extractive: taking raw materials from the earth.\n00:05:38.330 Linear: take, make, waste.\n00:05:41.330 Powered by fossil fuel-derived energy.\n00:05:43.330 Wasteful: abusive and focused on labor productivity.\n00:05:47.330 More carpet per man-hour.\n00:05:50.330 Thinking it through, I realized that all those attributes\n00:05:53.330 must be changed to move T to the denominator.\n00:05:58.330 In the new industrial revolution extractive must be replaced by renewable;\n00:06:03.330 linear by cyclical;\n00:06:05.330 fossil fuel energy by renewable energy, sunlight;\n00:06:09.330 wasteful by waste-free;\n00:06:11.330 and abusive by benign;\n00:06:13.330 and labor productivity by resource productivity.\n00:06:17.330 And I reasoned that if we could make those transformative changes,\n00:06:21.330 and get rid of T1 altogether,\n00:06:23.330 we could reduce our impact to zero,\n00:06:26.330 including our impact on the climate.\n00:06:29.330 And that became the Interface plan in 1995,\n00:06:32.330 and has been the plan ever since.\n00:06:35.330 We have measured our progress very rigorously.\n00:06:39.330 So I can tell you how far we have come in the ensuing 12 years.\n00:06:43.330 Net greenhouse gas emissions\n00:06:45.330 down 82 percent in absolute

tonnage.\n00:06:49.330 (Applause)\n00:06:53.330 Over the same span of time\n00:06:55.330 sales have increased by two-thirds and profits have doubled.\n00:06:58.330 So an 82 percent absolute reduction\n00:07:01.330 translates into a 90 percent reduction\n00:07:03.330 in greenhouse gas intensity relative to sales.\n00:07:07.330 This is the magnitude\n00:07:09.330 of the reduction the entire global technosphere\n00:07:12.330 must realize by 2050\n00:07:15.330 to avoid catastrophic climate disruption --\n00:07:18.330 so the scientists are telling us.\n00:07:21.330 Fossil fuel usage is down 60 percent per unit of production,\n00:07:25.330 due to efficiencies in renewables.\n00:07:27.330 The cheapest, most secure barrel of oil there is\n00:07:30.330 is the one not used through efficiencies.\n00:07:33.330 Water usage is down 75 percent\n00:07:36.330 in our worldwide carpet tile business.\n00:07:38.330 Down 40 percent in our broadloom carpet business,\n00:07:41.330 which we acquired in 1993\n00:07:43.330 right here in California, City of Industry,\n00:07:45.330 where water is so precious.\n00:07:48.330 Renewable or recyclable materials are 25 percent of the total, and growing rapidly.\n00:07:52.330 Renewable energy is 27 percent of our total,\n00:07:55.330 going for 100 percent.\n00:07:57.330 We have diverted 148 million pounds --\n00:08:00.330 that's 74,000 tons --\n00:08:02.330 of used carpet from landfills,\n00:08:05.330 closing the loop on material flows\n00:08:07.330 through reverse logistics\n00:08:09.330 and post-consumer recycling technologies\n00:08:12.330 that did not exist when we started 14 years ago.\n00:08:16.330 Those new cyclical technologies\n00:08:18.330 have contributed mightily to the fact that we have produced and sold\n00:08:21.330 85 million square yards of climate-neutral carpet\n00:08:25.330 since 2004,\n00:08:27.330 meaning no net contribution to global climate disruption\n00:08:31.330 in producing the carpet throughout the supply chain,\n00:08:33.330 from mine and well head clear to end-of-life reclamation --\n00:08:38.330 independent third-party certified.\n00:08:40.330 We call it Cool Carpet.\n00:08:43.330 And it has been a powerful marketplace differentiator,\n00:08:46.330 increasing sales and profits.\n00:08:48.330 Three years ago we launched carpet tile for the home,\n00:08:52.330 under the brand Flor,\n00:08:54.330 misspelled F-L-O-R.\n00:08:57.330 You can point and click today at Flor.com\n00:08:59.330 and have Cool Carpet delivered to your front door in five days.\n00:09:03.330 It is practical, and pretty too.\n00:09:06.330 (Laughter)\n00:09:07.330 (Applause)\n00:09:13.330 We reckon that we are a bit over halfway\n00:09:15.330 to our goal: zero impact, zero footprint.\n00:09:20.330 We've set 2020 as our target year for zero,\n00:09:23.330 for reaching the top, the summit of Mount Sustainability.\n00:09:28.330 We call this Mission Zero.\n00:09:30.330 And this is perhaps the most important facet:\n00:09:33.330 we have found Mission Zero to be incredibly good for business.\n00:09:37.330 A better business model,\n00:09:40.330 a better way to bigger profits.\n00:09:42.330 Here is the business case for sustainability.\n00:09:45.330 From real life experience, costs are down, not up,\n00:09:49.330 reflecting some 400 million dollars\n00:09:51.330 of avoided costs in pursuit of zero waste --\n00:09:55.330 the first face of Mount Sustainability.\n00:09:58.330 This has paid all the costs for the transformation of Interface.\n00:10:02.330 And this dispels a myth too,\n00:10:04.330 this false choice between the environment and the economy.\n00:10:08.330 Our products are the best they've ever been,\n00:10:10.330 inspired by design for sustainability,\n00:10:12.330 an unexpected wellspring of innovation.\n00:10:16.330 Our people are galvanized around this shared higher purpose.\n00:10:19.330 You cannot

beat it for attracting the best people\n00:10:21.330 and bringing them together.\n00:10:24.330 And the goodwill of the marketplace is astonishing.\n00:10:27.330 No amount of advertising, no clever marketing campaign,\n00:10:31.330 at any price, could have produced or created\n00:10:34.330 this much goodwill.\n00:10:37.330 Costs, products, people, marketplaces --\n00:10:39.330 what else is there?\n00:10:41.330 It is a better business model.\n00:10:43.330 And here is our 14-year record of sales and profits.\n00:10:48.330 There is a dip there, from 2001 to 2003:\n00:10:51.330 a dip when our sales, over a three-year period,\n00:10:53.330 were down 17 percent.\n00:10:55.330 But the marketplace was down 36 percent.\n00:10:58.330 We literally gained market share.\n00:11:00.330 We might not have survived that recession\n00:11:03.330 but for the advantages of sustainability.\n00:11:06.330 If every business were pursuing Interface plans,\n00:11:10.330 would that solve all our problems?\n00:11:12.330 I don't think so.\n00:11:14.330 I remain troubled by the revised Ehrlich equation,\n00:11:17.330 I equals P times A divided by T2.\n00:11:21.330 That A is a capital A,\n00:11:23.330 suggesting that affluence is an end in itself.\n00:11:28.330 But what if we reframed Ehrlich further?\n00:11:32.330 And what if we made A a lowercase 'a,'\n00:11:35.330 suggesting that it is a means to an end,\n00:11:37.330 and that end is happiness --\n00:11:40.330 more happiness with less stuff.\n00:11:43.330 You know that would reframe civilization itself --\n00:11:46.330 (Applause) --\n00:11:54.330 and our whole system of economics,\n00:11:57.330 if not for our species, then perhaps for the one that succeeds us:\n00:12:03.330 the sustainable species, living on a finite earth,\n00:12:06.330 ethically, happily and ecologically\n00:12:09.330 in balance with nature\n00:12:11.330 and all her natural systems for a thousand generations,\n00:12:14.330 or 10,000 generations --\n00:12:16.330 that is to say, into the indefinite future.\n00:12:19.330 But does the earth have to wait for our extinction as a species?\n00:12:24.330 Well maybe so. But I don't think so.\n00:12:27.330 At Interface we really intend to bring this prototypical\n00:12:30.330 sustainable, zero-footprint industrial company\n00:12:33.330 fully into existence by 2020.\n00:12:36.330 We can see our way now,\n00:12:38.330 clear to the top of that mountain.\n00:12:40.330 And now the challenge is in execution.\n00:12:43.330 And as my good friend and adviser Amory Lovins says,\n00:12:46.330 "If something exists, it must be possible."\n00:12:50.330 (Laughter)\n00:12:53.330 If we can actually do it, it must be possible.\n00:12:56.330 If we, a petro-intensive company can do it, anybody can.\n00:13:00.330 And if anybody can, it follows that everybody can.\n00:13:04.330 Hawken fulfilled business and industry,\n00:13:07.330 leading humankind away from the abyss\n00:13:11.330 because, with continued unchecked decline of the biosphere,\n00:13:16.330 a very dear person is at risk here --\n00:13:19.330 frankly, an unacceptable risk.\n00:13:21.330 Who is that person?\n00:13:23.330 Not you. Not I.\n00:13:25.330 But let me introduce you to the one who is most at risk here.\n00:13:28.330 And I myself met this person in the early days of this mountain climb.\n00:13:32.330 On a Tuesday morning in March of 1996,\n00:13:36.330 I was talking to people, as I did at every opportunity back then,\n00:13:39.330 bringing them along and often not knowing whether I was connecting.\n00:13:43.330 But about five days later back in Atlanta,\n00:13:46.330 I received an email from Glenn Thomas,\n00:13:49.330 one of my people in the California meeting.\n00:13:51.330 He was sending me an original poem\n00:13:53.330 that he had composed after our Tuesday

morning together.\n00:13:56.330 And when I read it it was one of the most uplifting moments of my life.\n00:14:00.330 Because it told me, by God, one person got it.\n00:14:04.330 Here is what Glenn wrote. And here is that person, most at risk.\n00:14:08.330 Please meet "Tomorrow's Child."\n00:14:12.330 "Without a name, an unseen face, and knowing not your time or place,\n00:14:16.330 Tomorrow's child, though yet unborn,\n00:14:19.330 I met you first last Tuesday morn.\n00:14:22.330 A wise friend introduced us two.\n00:14:24.330 And through his sobering point of view\n00:14:26.330 I saw a day that you would see, a day for you but not for me.\n00:14:31.330 Knowing you has changed my thinking.\n00:14:33.330 For I never had an inkling\n00:14:35.330 that perhaps the things I do might someday,\n00:14:38.330 somehow threaten you.\n00:14:41.330 Tomorrow's child, my daughter, son,\n00:14:43.330 I'm afraid I've just begun to think of you and of your good,\n00:14:45.330 though always having known I should.\n00:14:49.330 Begin, I will.\n00:14:51.330 The way the cost of what I squander, what is lost,\n00:14:54.330 if ever I forget that you\n00:14:56.330 will someday come and live here too."\n00:15:00.330 Well, every day of my life since,\n00:15:02.330 "Tomorrow's Child" has spoken to me\n00:15:04.330 with one simple but profound message,\n00:15:06.330 which I presume to share with you.\n00:15:08.330 We are, each and every one,\n00:15:10.330 a part of the web of life.\n00:15:13.330 The continuum of humanity, sure, but in a larger sense, the web of life itself.\n00:15:17.330 And we have a choice to make\n00:15:19.330 during our brief, brief visit\n00:15:21.330 to this beautiful blue and green living planet:\n00:15:25.330 to hurt it or to help it.\n00:15:28.330 For you, it's your call.\n00:15:31.330 Thank you.\n00:15:33.330 (Applause)\n", "cloud_doc_url": null}, {"matched_text": "\u301030\u2020source\u3011", "start_idx": 1449, "end_idx": 1460, "alt": null, "type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQv0sZY", "source": "my_files", "snippet": "\n\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen Haggard\n\nRegenesis\n\n\n\nCover Design: Wiley\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael Sotnikov, \nCheonggyecheong Festival; Courtesy of Playa Viva \u00a9 David Leventhal; Teachers \u00a9 Regenesis Group; \u00a9 Sasaki \nAssociates, Las Salinas Master Plan\n\nThis book is printed on acid-free paper. \n\nCopyright \u00a9 2016 by John Wiley & Sons, Inc. All rights reserved\n\nPublished by John Wiley & Sons, Inc., Hoboken, New Jersey\nPublished simultaneously in Canada\n\nNo part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any \nmeans, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section \n107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or \nauthorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood \nDrive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the web at www.copyright.com. Requests to \nthe Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River \nStreet, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at www.wiley.com/go/permissions.\n\nLimit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this \nbook, they make no representations or warranties with the respect to the accuracy or completeness of the contents \nof this book and specifically disclaim any implied warranties of

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\nout its distinctive role. \n\nPrinciple: Find your distinctive, value-adding roles.\n\nChapter 7: TrAnSFOrMATiOnAl leverAge . . . . . 153\nPremise: Small conscious and conscientious interventions in the right place can create \nbeneficial, system-wide effects.\n\nPrinciple: Leverage systemic regeneration by making nodal interventions.\n\nChapter 8: develOPMenTAl wOrk . . . . . 177\nPremise: A project can only create systemic benefit within a field of caring, \nco-creativity, and co-responsibility.\n\nPrinciple: Design the design process to be developmental.\n\nPArT Three: Becoming a regenerative Change Agent . . . . . 197\n\nChapter 9: SySTeMS ACTuAlizing . . . . . 201\nPremise: The actualization of a self requires the simultaneous development of the \nsystems of which it is a part.\n\nPrinciple: Become a systems actualizer.\n\nepilogue . . . . . 215\n\nFurther reading . . . . . 219\n\nindex . . . . . 223\n\n\n\nv\n\nForeword\n\nPredictions of the future can be hazardous or downright foolish. But the \n failure of foresight\u2014the inability to read the hand-writing on the wall\u2014is \never more so. Designers of all kinds work in the conflicted space between \nthese two poles. Their goal is to improve small parts of a rapidly changing \nworld with the tools of form, scale, materials, energy, water, color, landscape, \nand the creativity that is found most often at the grassroots level. But what \nneeds to be improved?\n\nThe short answer is \u201ca great deal,\u201d including an energy system that is rapidly \ndestabilizing the climate, an economy driving tens of thousands of species to \nextinction, a political system that sanctions gross inequality, an uncivil society, \nthe growing autism toward the natural world, and a global system mired in \nconflict. These are related problems, parts of a larger civilizational crisis with \nroots traceable to the seventeenth century authors of the mechanical world \nview. But there are deeper pathologies with footprints back to our ancient \nschizophrenia toward the natural world that had to be tamed a bit before it \ncould be appreciated.\n\nDesigners, however, typically do not work at the macro scale of civilization \nfor good reasons. Whether as architecture, engineering, materials, or land-\nscapes, design is bounded by the minute particulars of projects in their spe-\ncific social, cultural, and historical context. As a result designers work from the \nbottom up on projects at the building, neighborhood, and city scales. But the \nbig problems mentioned above are in large part the sum total of bad design \n(including that of public policies) at lower levels. There are many reasons for \nbad design, not the least of which is a professional focus on form-making, \noften oblivious to other consequences.\n\nBeginning in the 1970s a few renegade architects like Sim Van der Ryn in \nCalifornia became concerned about the collateral environmental impacts \nof the design professions. Van der Ryn envisioned ecological design as the \n\n\n\nvi Foreword\n\n calibration of buildings with their places, which required further integral \nunderstanding of landscapes, energy flows, waste cycling, materials, sun-\nlight, water, and ecological processes. Ecological

design, in other words, \naims to calibrate human actions with the way natural systems work as par-\nticular places, larger landscapes, and whole ecologies. It aims to work with, \nnot against, the flows of energy and natural cycling of materials. The goal, \nin short, was to reduce environmental impacts of the \u201cbuilt environment\u201d \nin a civilization that prized economic expansion above all else with hardly a \nthought for the morrow.\n\nWhat began so modestly in the 1970s has rapidly grown into a global move-\nment to harmonize buildings, neighborhoods, and cities with the surround-\ning nature. After the publication of the Brundtland Commission report in 1987, \nthe goals of ecological designers expanded to embrace the wider (but vague) \nmission of sustainability. But we know now that that word signifies more \nthan was once assumed. Sustainability is the sum total of other qualities. As \nChattanooga City Councilman, David Crockett puts it: \u201cmake it clean, green, \nsafe, and fair and it will be sustainable.\u201d The left side of that equation, how-\never, requires the elimination of the growing inequality that is a precursor to \n violence and ruined lives. It further requires rethinking our core assumptions \nabout the relation between economic growth and real progress. Ecological \ndesign, in other words, must be large enough in foresight, scope, and heart \nto include the social and economic environment in which it is embedded. In \nthat way ecological design is a radical endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2 Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs

and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of better possibilities, not just makers \nof buildings and things.\n\nA rapidly warming climate will add to the design challenges ahead. Design-\ners must reckon with a world of higher temperatures, stronger winds, more \nfrequent and larger storms, rising ocean levels, longer droughts, much larger \nrainfall events, and new diseases.7 These will likely cause interruptions in \nsupplies of food, energy, and water and could trigger social disruptions. We \nmust design with the awareness of the fragility of our civilization, as Jared \nDiamond and others warn. We must build in the ability to maintain hope and \nfunction as a society in emergency (and possibly breakdown) and lay the \nbasis for recovery.8\n\nThe Great Work of our generation is to create a post-fossil-fuel and post-\nconsumer economy that is regenerative, fair, durable, resilient, convivial, and \ndemocratic. It must be powered by renewable energy. It must be a circular \neconomy that recycles, reuses, or transforms its wastes. Of necessity it will be \nmuch more focused on essentials of food, energy, shelter, clean water, educa-\ntion, the arts, and rootedness in place and bioregion. It will be built by local \npeople who cherish and understand their places\nThe file is too long and its contents have been truncated.\n", "cloud_doc_url": null}, {"matched_text": "\u301029\u2020source\u3011", "start_idx": 2222, "end_idx": 2233, "alt": null, "type": "file", "name": "tactiq-free-transcript-IoRjz8iTVoo.txt", "id": "file-O15fyq55A9kPiWRmfng811x4", "source": "my_files", "snippet": "# tactiq.io free youtube transcript\n# Cradle to cradle design | William McDonough\n# https://www.youtube.com/watch/IoRjz8iTVoo\n\n00:00:26.000 In 1962, with Rachel Carson's "Silent Spring,"\n00:00:30.000 I think for people like me in the world of the making of things,\n00:00:35.000 the canary in the mine wasn't singing.\n00:00:39.000 And so the question that we might not have birds\n00:00:42.000 became kind of fundamental to those of us wandering around\n00:00:45.000 looking for the meadowlarks that seemed to have all disappeared.\n00:00:48.000 And the question was, were the birds singing?\n00:00:51.000 Now, I'm not a scientist, that'll be really clear.\n00:00:55.000 But, you know, we've just come from this discussion of what a bird might be.\n00:00:59.000 What is a bird?\n00:01:00.000 Well, in my world, this is a rubber duck.\n00:01:04.000 It comes in California with a warning --\n00:01:06.000 "This product contains chemicals known by the State of

California\n00:01:09.000 to cause cancer and birth defects or other reproductive harm."\n00:01:16.000 This is a bird.\n00:01:19.000 What kind of culture would produce a product of this kind\n00:01:22.000 and then label it and sell it to children?\n00:01:27.000 I think we have a design problem.\n00:01:30.000 Someone heard the six hours of talk that I gave\n00:01:35.000 called "The Monticello Dialogues" on NPR, and sent me this as a thank you note --\n00:01:41.000 "We realize that design is a signal of intention,\n00:01:43.000 but it also has to occur within a world,\n00:01:46.000 and we have to understand that world in order to\n00:01:50.000 imbue our designs with inherent intelligence,\n00:01:53.000 and so as we look back at the basic state of affairs\n00:01:58.000 in which we design, we, in a way, need to go to the primordial condition\n00:02:03.000 to understand the operating system and the frame conditions of a planet,\n00:02:08.000 and I think the exciting part of that is the good news that's there,\n00:02:13.000 because the news is the news of abundance,\n00:02:16.000 and not the news of limits,\n00:02:18.000 and I think as our culture tortures itself now\n00:02:23.000 with tyrannies and concerns over limits and fear,\n00:02:28.000 we can add this other dimension of abundance that is coherent,\n00:02:33.000 driven by the sun, and start to imagine\n00:02:35.000 what that would be like to share."\n00:02:42.000 That was a nice thing to get.\n00:02:44.000 That was one sentence.\n00:02:48.000 Henry James would be proud.\n00:02:50.000 This is -- I put it down at the bottom,\n00:02:52.000 but that was extemporaneous, obviously.\n00:02:55.000 The fundamental issue is that, for me,\n00:02:58.000 design is the first signal of human intentions.\n00:03:00.000 So what are our intentions, and what would our intentions be --\n00:03:04.000 if we wake up in the morning, we have designs on the world --\n00:03:07.000 well, what would our intention be as a species\n00:03:09.000 now that we're the dominant species?\n00:03:11.000 And it's not just stewardship and dominion debate,\n00:03:14.000 because really, dominion is implicit in stewardship --\n00:03:20.000 because how could you dominate something you had killed?\n00:03:22.000 And stewardship's implicit in dominion,\n00:03:24.000 because you can't be steward of something if you can't dominate it.\n00:03:26.000 So the question is, what is the first question for designers?\n00:03:32.000 Now, as guardians -- let's say the state, for example,\n00:03:35.000 which reserves the right to kill, the right to be duplicitous and so on --\n00:03:40.000 the question we're asking the guardian at this point is\n00:03:43.000 are we meant, how are we meant,\n00:03:45.000 to secure local societies, create world peace\n00:03:47.000 and save the environment?\n00:03:49.000 But I don't know that that's the common debate.\n00:03:52.000 Commerce, on the other hand, is relatively quick,\n00:03:56.000 essentially creative, highly effective and efficient,\n00:03:58.000 and fundamentally honest, because we can't exchange\n00:04:01.000 value for very long if we don't trust each other.\n00:04:05.000 So we use the tools of commerce primarily for our work,\n00:04:07.000 but the question we bring to it is,\n00:04:09.000 how do we love all the children of all species for all time?\n00:04:13.000 And so we start our designs with that question.\n00:04:16.000 Because what we realize today is that modern culture\n00:04:18.000 appears to have adopted a strategy of tragedy.\n00:04:21.000 If we come here and say, "Well, I didn't intend\n00:04:23.000 to cause global warming on the way here,"\n00:04:24.000 and we say, "That's not part of my plan,"\n00:04:26.000 then we realize it's part of our de facto plan.\n00:04:29.000 Because it's the thing that's happening because we have no other plan.\n00:04:32.000 And I was at the

White House for President Bush,\n00:04:34.000 meeting with every federal department and agency,\n00:04:36.000 and I pointed out that they appear to have no plan.\n00:04:40.000 If the end game is global warming, they're doing great.\n00:04:42.000 If the end game is mercury toxification of our children\n00:04:45.000 downwind of coal fire plants as they scuttled the Clean Air Act,\n00:04:48.000 then I see that our education programs should be explicitly defined as,\n00:04:52.000 "Brain death for all children. No child left behind."\n00:04:54.000 (Applause)\n00:04:58.000 So, the question is, how many federal officials\n00:05:02.000 are ready to move to Ohio and Pennsylvania with their families?\n00:05:05.000 So if you don't have an endgame of something delightful,\n00:05:09.000 then you're just moving chess pieces around,\n00:05:11.000 if you don't know you're taking the king.\n00:05:12.000 So perhaps we could develop a strategy of change,\n00:05:15.000 which requires humility. And in my business as an architect,\n00:05:18.000 it's unfortunate the word "humility" and the word "architect"\n00:05:22.000 have not appeared in the same paragraph since "The Fountainhead."\n00:05:25.000 So if anybody here has trouble with the concept of design humility,\n00:05:30.000 reflect on this -- it took us 5,000 years\n00:05:33.000 to put wheels on our luggage.\n00:05:37.000 So, as Kevin Kelly pointed out, there is no endgame.\n00:05:42.000 There is an infinite game, and we're playing in that infinite game.\n00:05:46.000 And so we call it "cradle to cradle,"\n00:05:48.000 and our goal is very simple.\n00:05:49.000 This is what I presented to the White House.\n00:05:51.000 Our goal is a delightfully diverse, safe, healthy and just world,\n00:05:54.000 with clean air, clean water, soil and power --\n00:05:57.000 economically, equitably, ecologically and elegantly enjoyed, period.\n00:06:01.000 (Applause)\n00:06:04.000 What don't you like about this?\n00:06:07.000 Which part of this don't you like?\n00:06:09.000 So we realized we want full diversity,\n00:06:11.000 even though it can be difficult to remember what De Gaulle said\n00:06:14.000 when asked what it was like to be President of France.\n00:06:16.000 He said, "What do you think it's like trying to run a country with 400 kinds of cheese?"\n00:06:20.000 But at the same time, we realize that our products are not safe and healthy.\n00:06:23.000 So we've designed products\n00:06:25.000 and we analyzed chemicals down to the parts per million.\n00:06:27.000 This is a baby blanket by Pendleton that will give your child nutrition\n00:06:30.000 instead of Alzheimer's later in life.\n00:06:32.000 We can ask ourselves, what is justice,\n00:06:34.000 and is justice blind, or is justice blindness?\n00:06:38.000 And at what point did that uniform turn from white to black?\n00:06:43.000 Water has been declared a human right by the United Nations.\n00:06:46.000 Air quality is an obvious thing to anyone who breathes.\n00:06:48.000 Is there anybody here who doesn't breathe?\n00:06:51.000 Clean soil is a critical problem -- the nitrification, the dead zones\n00:06:54.000 in the Gulf of Mexico.\n00:06:56.000 A fundamental issue that's not being addressed.\n00:06:58.000 We've seen the first form of solar energy\n00:07:00.000 that's beat the hegemony of fossil fuels in the form of wind\n00:07:03.000 here in the Great Plains, and so that hegemony is leaving.\n00:07:06.000 And if we remember Sheikh Yamani when he formed OPEC,\n00:07:09.000 they asked him, "When will we see the end of the age of oil?"\n00:07:12.000 I don't know if you remember his answer, but it was,\n00:07:15.000 "The Stone Age didn't end because we ran out of stones."\n00:07:19.000 We see that companies acting ethically in this

world\n00:07:23.000 are outperforming those that don't.\n00:07:24.000 We see the flows of materials in a rather terrifying prospect.\n00:07:29.000 This is a hospital monitor from Los Angeles, sent to China.\n00:07:32.000 This woman will expose herself to toxic phosphorous,\n00:07:35.000 release four pounds of toxic lead into her childrens' environment,\n00:07:38.000 which is from copper.\n00:07:40.000 On the other hand, we see great signs of hope.\n00:07:42.000 Here's Dr. Venkataswamy in India, who's figured out\n00:07:45.000 how to do mass-produced health.\n00:07:47.000 He has given eyesight to two million people for free.\n00:07:51.000 We see in our material flows that car steels don't become car steel again\n00:07:54.000 because of the contaminants of the coatings --\n00:07:56.000 bismuth, antimony, copper and so on.\n00:07:58.000 They become building steel.\n00:07:59.000 On the other hand, we're working with Berkshire Hathaway,\n00:08:01.000 Warren Buffett and Shaw Carpet,\n00:08:04.000 the largest carpet company in the world.\n00:08:05.000 We've developed a carpet that is continuously recyclable,\n00:08:08.000 down to the parts per million.\n00:08:11.000 The upper is Nylon 6 that can go back to caprolactam,\n00:08:14.000 the bottom, a polyolephine -- infinitely recyclable thermoplastic.\n00:08:17.000 Now if I was a bird, the building on my left is a liability.\n00:08:21.000 The building on my right, which is our corporate campus for The Gap\n00:08:24.000 with an ancient meadow, is an asset -- its nesting grounds.\n00:08:29.000 Here's where I come from. I grew up in Hong Kong,\n00:08:31.000 with six million people in 40 square miles.\n00:08:33.000 During the dry season, we had four hours of water every fourth day.\n00:08:37.000 And the relationship to landscape was that of farmers who have been\n00:08:40.000 farming the same piece of ground for 40 centuries.\n00:08:44.000 You can't farm the same piece of ground for 40 centuries\n00:08:46.000 without understanding nutrient flow.\n00:08:49.000 My childhood summers were in the Puget Sound of Washington,\n00:08:52.000 among the first growth and big growth.\n00:08:54.000 My grandfather had been a lumberjack in the Olympics,\n00:08:56.000 so I have a lot of tree karma I am working off.\n00:09:01.000 I went to Yale for graduate school,\n00:09:03.000 studied in a building of this style by Le Corbusier,\n00:09:05.000 affectionately known in our business as Brutalism.\n00:09:09.000 If we look at the world of architecture,\n00:09:12.000 we see with Mies' 1928 tower for Berlin,\n00:09:15.000 the question might be, "Well, where's the sun?"\n00:09:17.000 And this might have worked in Berlin, but we built it in Houston,\n00:09:20.000 and the windows are all closed. And with most products\n00:09:23.000 appearing not to have been designed for indoor use,\n00:09:25.000 this is actually a vertical gas chamber.\n00:09:28.000 When I went to Yale, we had the first energy crisis,\n00:09:31.000 and I was designing the first solar-heated house in Ireland\n00:09:33.000 as a student, which I then built --\n00:09:35.000 which would give you a sense of my ambition.\n00:09:37.000 And Richard Meier, who was one of my teachers,\n00:09:39.000 kept coming over to my desk to give me criticism,\n00:09:41.000 and he would say, "Bill, you've got to understand- --\n00:09:43.000 solar energy has nothing to do with architecture."\n00:09:51.000 I guess he didn't read Vitruvius.\n00:09:53.000 In 1984, we did the first so-called "green office" in America\n00:09:57.000 for Environmental Defense.\n00:09:58.000 We started asking manufacturers what were in their materials.\n00:10:01.000 They said, "They're proprietary, they're legal, go away."\n00:10:03.000 The only indoor quality work done in this country at that time\n00:10:05.000 was sponsored by R.J. Reynolds Tobacco

Company,\n00:10:08.000 and it was to prove there was no danger\n00:10:09.000 from secondhand smoke in the workplace.\n00:10:12.000 So, all of a sudden, here I am, graduating from high school in 1969,\n00:10:16.000 and this happens, and we realize that "away" went away.\n00:10:19.000 Remember we used to throw things away, and we'd point to away?\n00:10:23.000 And yet, NOAA has now shown us, for example --\n00:10:25.000 you see that little blue thing above Hawaii?\n00:10:27.000 That's the Pacific Gyre.\n00:10:28.000 It was recently dragged for plankton by scientists,\n00:10:30.000 and they found six times as much plastic as plankton.\n00:10:34.000 When asked, they said, "It's kind of like a giant toilet that doesn't flush."\n00:10:39.000 Perhaps that's away.\n00:10:40.000 So we're looking for the design rules of this --\n00:10:42.000 this is the highest biodiversity of trees in the world, Irian Jaya,\n00:10:44.000 259 species of tree, and we described this\n00:10:48.000 in the book, "Cradle to Cradle."\n00:10:49.000 The book itself is a polymer. It is not a tree.\n00:10:53.000 That's the name of the first chapter -- "This Book is Not a Tree."\n00:10:56.000 Because in poetics, as Margaret Atwood pointed out,\n00:10:59.000 "we write our history on the skin of fish\n00:11:01.000 with the blood of bears."\n00:11:04.000 And with so much polymer, what we really need\n00:11:05.000 is technical nutrition, and to use something\n00:11:08.000 as elegant as a tree -- imagine this design assignment:\n00:11:11.000 Design something that makes oxygen, sequesters carbon,\n00:11:13.000 fixes nitrogen, distills water, accrues solar energy as fuel,\n00:11:17.000 makes complex sugars and food, creates microclimates,\n00:11:21.000 changes colors with the seasons and self-replicates.\n00:11:27.000 Well, why don't we knock that down and write on it?\n00:11:29.000 (Laughter)\n00:11:35.000 So, we're looking at the same criteria\n00:11:37.000 as most people -- you know, can I afford it?\n00:11:39.000 Does it work? Do I like it?\n00:11:41.000 We're adding the Jeffersonian agenda, and I come from Charlottesville,\n00:11:43.000 where I've had the privilege of living in a house designed by Thomas Jefferson.\n00:11:47.000 We're adding life, liberty and the pursuit of happiness.\n00:11:53.000 Now if we look at the word "competition,"\n00:11:54.000 I'm sure most of you've used it.\n00:11:56.000 You know, most people don't realize it comes from\n00:11:57.000 the Latin competere, which means strive together.\n00:12:00.000 It means the way Olympic athletes train with each other.\n00:12:03.000 They get fit together, and then they compete.\n00:12:06.000 The Williams sisters compete -- one wins Wimbledon.\n00:12:08.000 So we've been looking at the idea of competition\n00:12:11.000 as a way of cooperating in order to get fit together.\n00:12:15.000 And the Chinese government has now --\n00:12:16.000 I work with the Chinese government now --\n00:12:18.000 has taken this up.\n00:12:20.000 We're also looking at survival of the fittest,\n00:12:22.000 not in just competition terms in our modern context\n00:12:24.000 of destroy the other or beat them to the ground,\n00:12:27.000 but really to fit together and build niches\n00:12:29.000 and have growth that is good.\n00:12:31.000 Now most environmentalists don't say growth is good,\n00:12:33.000 because, in our lexicon, asphalt is two words: assigning blame.\n00:12:38.000 But if we look at asphalt as our growth,\n00:12:41.000 then we realize that all we're doing is destroying\n00:12:43.000 the planetary's fundamental underlying operating system.\n00:12:47.000 So when we see E equals mc squared come along, from a poet's perspective,\n00:12:52.000 we see energy as physics, chemistry as

mass,\n00:12:54.000 and all of a sudden, you get this biology.\n00:12:56.000 And we have plenty of energy, so we'll solve that problem,\n00:12:59.000 but the biology problem's tricky, because as we put through\n00:13:02.000 all these toxic materials that we disgorge,\n00:13:05.000 we will never be able to recover that.\n00:13:07.000 And as Francis Crick pointed out, nine years\n00:13:09.000 after discovering DNA with Mr. Watson,\n00:13:12.000 that life itself has to have growth as a precondition --\n00:13:16.000 it has to have free energy, sunlight\n00:13:18.000 and it needs to be an open system of chemicals.\n00:13:21.000 So we're asking for human artifice to become a living thing,\n00:13:24.000 and we want growth, we want free energy from sunlight\n00:13:26.000 and we want an open metabolism for chemicals.\n00:13:29.000 Then, the question becomes not growth or no growth,\n00:13:31.000 but what do you want to grow?\n00:13:34.000 So instead of just growing destruction,\n00:13:36.000 we want to grow the things that we might enjoy,\n00:13:38.000 and someday the FDA will allow us to make French cheese.\n00:13:41.000 So therefore, we have these two metabolisms,\n00:13:45.000 and I worked with a German chemist, Michael Braungart,\n00:13:47.000 and we've identified the two fundamental metabolisms.\n00:13:49.000 The biological one I'm sure you understand,\n00:13:51.000 but also the technical one, where we take materials\n00:13:53.000 and put them into closed cycles.\n00:13:55.000 We call them biological nutrition and technical nutrition.\n00:13:58.000 Technical nutrition will be in an order of magnitude of biological nutrition.\n00:14:02.000 Biological nutrition can supply about 500 million humans,\n00:14:05.000 which means that if we all wore Birkenstocks and cotton,\n00:14:07.000 the world would run out of cork and dry up.\n00:14:10.000 So we need materials in closed cycles,\n00:14:12.000 but we need to analyze them down to the parts per million\n00:14:14.000 for cancer, birth defects, mutagenic effects,\n00:14:17.000 disruption of our immune systems, biodegradation, persistence,\n00:14:20.000 heavy metal content, knowledge of how we're making them\n00:14:23.000 and their production and so on.\n00:14:25.000 Our first product was a textile where we analyzed 8,000 chemicals\n00:14:29.000 in the textile industry.\n00:14:30.000 Using those intellectual filters, we eliminated [7,962.]\n00:14:35.000 We were left with 38 chemicals.\n00:14:37.000 We have since databased the 4000 most commonly used chemicals\n00:14:40.000 in human manufacturing, and we're releasing this database into the public in six weeks.\n00:14:45.000 So designers all over the world can analyze their products\n00:14:47.000 down to the parts per million for human and ecological health.\n00:14:52.000 (Applause)\n00:14:57.000 We've developed a protocol so that companies can send\n00:15:00.000 these same messages all the way through their supply chains,\n00:15:03.000 because when we asked most companies we work with -- about a trillion dollars\n00:15:06.000 -- and say, "Where does your stuff come from?" They say, "Suppliers."\n00:15:08.000 "And where does it go?"\n00:15:10.000 "Customers."\n00:15:11.000 So we need some help there.\n00:15:12.000 So the biological nutrients, the first fabrics --\n00:15:14.000 the water coming out was clean enough to drink.\n00:15:16.000 Technical nutrients -- this is for Shaw Carpet, infinitely reusable carpet.\n00:15:20.000 Here's nylon going back to caprolactam back to carpet.\n00:15:23.000 Biotechnical nutrients -- the Model U for Ford Motor,\n00:15:26.000 a cradle to cradle car -- concept car.\n00:15:28.000 Shoes for Nike, where the uppers are polyesters, infinitely recyclable,\n00:15:32.000 the bottoms are biodegradable soles.\n00:15:35.000 Wear your old shoes in, your new shoes out.\n00:15:37.000 There is no finish line.\n00:15:39.000

The idea here of the car is that some of the materials\n00:15:41.000 go back to the industry forever, some of the materials go back to soil --\n00:15:44.000 it's all solar-powered.\n00:15:46.000 Here's a building at Oberlin College we designed\n00:15:48.000 that makes more energy than it needs to operate and purifies its own water.\n00:15:52.000 Here's a building for The Gap, where the ancient grasses\n00:15:54.000 of San Bruno, California, are on the roof.\n00:15:58.000 And this is our project for Ford Motor Company.\n00:16:00.000 It's the revitalization of the River Rouge in Dearborn.\n00:16:02.000 This is obviously a color photograph.\n00:16:06.000 These are our tools. These are how we sold it to Ford.\n00:16:10.000 We saved Ford 35 million dollars doing it this way, day one,\n00:16:13.000 which is the equivalent of the Ford Taurus\n00:16:15.000 at a four percent margin of an order for 900 million dollars worth of cars.\n00:16:19.000 Here it is. It's the world's largest green roof, 10 and a half acres.\n00:16:22.000 This is the roof, saving money,\n00:16:25.000 and this is the first species to arrive here. These are killdeer.\n00:16:29.000 They showed up in five days.\n00:16:32.000 And we now have 350-pound auto workers\n00:16:34.000 learning bird songs on the Internet.\n00:16:38.000 We're developing now protocols for cities --\n00:16:40.000 that's the home of technical nutrients.\n00:16:42.000 The country -- the home of biological. And putting them together.\n00:16:45.000 And so I will finish by showing you a new city\n00:16:47.000 we're designing for the Chinese government.\n00:16:49.000 We're doing 12 cities for China right now,\n00:16:52.000 based on cradle to cradle as templates.\n00:16:54.000 Our assignment is to develop protocols for the housing\n00:16:57.000 for 400 million people in 12 years.\n00:16:59.000 We did a mass energy balance -- if they use brick,\n00:17:01.000 they will lose all their soil and burn all their coal.\n00:17:04.000 They'll have cities with no energy and no food.\n00:17:06.000 We signed a Memorandum of Understanding --\n00:17:08.000 here's Madam Deng Nan, Deng Xiaoping's daughter --\n00:17:10.000 for China to adopt cradle to cradle.\n00:17:12.000 Because if they toxify themselves, being the lowest-cost producer,\n00:17:16.000 send it to the lowest-cost distribution -- Wal-Mart --\n00:17:18.000 and then we send them all our money, what we'll discover is that\n00:17:21.000 we have what, effectively, when I was a student,\n00:17:24.000 was called mutually assured destruction.\n00:17:27.000 Now we do it by molecule. These are our cities.\n00:17:30.000 We're building a new city next to this city; look at that landscape.\n00:17:33.000 This is the site.\n00:17:35.000 We don't normally do green fields, but this one is about to be built,\n00:17:39.000 so they brought us in to intercede.\n00:17:41.000 This is their plan.\n00:17:43.000 It's a rubber stamp grid that they laid right on that landscape.\n00:17:46.000 And they brought us in and said, "What would you do?"\n00:17:49.000 This is what they would end up with, which is another color photograph.\n00:17:53.000 So this is the existing site, so this is what it looks like now,\n00:17:56.000 and here's our proposal.\n00:17:58.000 (Applause)\n00:18:02.000 So the way we approached this\n00:18:04.000 is we studied the hydrology very carefully.\n00:18:06.000 We studied the biota, the ancient biota,\n00:18:08.000 the current farming and the protocols.\n00:18:10.000 We studied the winds and the sun to make sure everybody in the city\n00:18:12.000 will have fresh air, fresh water and direct sunlight\n00:18:18.000 in every single apartment at some point during the day.\n00:18:21.000 We then take the parks and lay them out as ecological infrastructure.\n00:18:25.000 We lay out the building areas.\n00:18:28.000 We start to

integrate commercial and mixed use\n00:18:29.000 so the people all have centers and places to be.\n00:18:32.000 The transportation is all very simple,\n00:18:34.000 everybody's within a five-minute walk of mobility.\n00:18:37.000 We have a 24-hour street, so that there's always a place that's alive.\n00:18:42.000 The waste systems all connect.\n00:18:44.000 If you flush a toilet, your feces will go to the sewage treatment plants,\n00:18:49.000 which are sold as assets, not liabilities.\n00:18:51.000 Because who wants the fertilizer factory that makes natural gas?\n00:18:55.000 The waters are all taken in to construct the wetlands for habitat restorations.\n00:19:00.000 And then it makes natural gas, which then goes back into the city\n00:19:04.000 to power the fuel for the cooking for the city.\n00:19:08.000 So this is -- these are fertilizer gas plants.\n00:19:10.000 And then the compost is all taken back\n00:19:13.000 to the roofs of the city, where we've got farming,\n00:19:15.000 because what we've done is lifted up the city,\n00:19:19.000 the landscape, into the air to -- to restore the native landscape\n00:19:26.000 on the roofs of the buildings.\n00:19:28.000 The solar power of all the factory centers\n00:19:31.000 and all the industrial zones with their light roofs powers the city.\n00:19:34.000 And this is the concept for the top of the city.\n00:19:36.000 We've lifted the earth up onto the roofs.\n00:19:40.000 The farmers have little bridges to get from one roof to the next.\n00:19:44.000 We inhabit the city with work/live space on all the ground floors.\n00:19:48.000 And so this is the existing city, and this is the new city.\n00:19:53.000 (Applause)\n", "cloud_doc_url": null}, {"matched_text": "\u301030\u2020source\u3011", "start_idx": 2780, "end_idx": 2791, "alt": null, "type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQv0sZY", "source": "my_files", "snippet": "\n\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen Haggard\n\nRegenesis\n\n\n\nCover Design: Wiley\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael Sotnikov, \nCheonggyecheong Festival; Courtesy of Playa Viva \u00a9 David Leventhal; Teachers \u00a9 Regenesis Group; \u00a9 Sasaki \nAssociates, Las Salinas Master Plan\n\nThis book is printed on acid-free paper. \n\nCopyright \u00a9 2016 by John Wiley & Sons, Inc. All rights reserved\n\nPublished by John Wiley & Sons, Inc., Hoboken, New Jersey\nPublished simultaneously in Canada\n\nNo part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any \nmeans, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section \n107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or \nauthorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood \nDrive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the web at www.copyright.com. Requests to \nthe Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River \nStreet, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at www.wiley.com/go/permissions.\n\nLimit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this \nbook, they make no representations or warranties with the respect to the accuracy or completeness of the contents \nof this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No \nwarranty may be created or extended by sales representatives or written sales materials. The advice and strategies \ncontained herein may not be

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\n\n\n\nv\n\nForeword\n\nPredictions of the future can be hazardous or downright foolish. But the \n failure of foresight\u2014the inability to read the hand-writing on the wall\u2014is \neven more so. Designers of all kinds work in the conflicted space between \nthese two poles. Their goal is to improve small parts of a rapidly changing \nworld with the tools of form, scale, materials, energy, water, color, landscape, \nand the creativity that is found most often at the grassroots level. But what \nneeds to be improved?\n\nThe short answer is \u201ca great deal,\u201d including an energy system that is rapidly \ndestabilizing the climate, an economy driving tens of thousands of species to \nextinction, a political system that sanctions gross inequality, an uncivil society, \nthe growing autism toward the natural world, and a global system mired in \nconflict. These are related problems, parts of a larger civilizational crisis with \nroots traceable to the seventeenth century authors of the mechanical world \nview. But there are deeper pathologies with footprints back to our ancient \nschizophrenia toward the natural world that had to be tamed a bit before it \ncould be appreciated.\n\nDesigners, however, typically do not work at the macro scale of civilization \nfor good reasons. Whether as architecture, engineering, materials, or land-\nscapes, design is bounded by the minute particulars of projects in their spe-\ncific social, cultural, and historical context. As a result designers work from the \nbottom up on projects at the building, neighborhood, and city scales. But the \nbig problems mentioned above are in large part the sum total of bad design \n(including that of public policies) at lower levels. There are many reasons for \nbad design, not the least of which is a professional focus on form-making, \noften oblivious to other consequences.\n\nBeginning in the 1970s a few renegade architects like Sim Van der Ryn in \nCalifornia became concerned about the collateral environmental impacts \nof the design professions. Van der Ryn envisioned ecological design as the \n\n\n\nvi Foreword\n\n calibration of buildings with their places, which required further integral \nunderstanding of landscapes, energy flows, waste cycling, materials, sun-\nlight, water, and ecological processes. Ecological design, in other words, \naims to calibrate human actions with the way natural systems work as par-\nticular places, larger landscapes, and whole ecologies. It aims to work

with, \nnot against, the flows of energy and natural cycling of materials. The goal, \nin short, was to reduce environmental impacts of the \u201cbuilt environment\u201d \nin a civilization that prized economic expansion above all else with hardly a \nthought for the morrow.\n\nWhat began so modestly in the 1970s has rapidly grown into a global move-\nment to harmonize buildings, neighborhoods, and cities with the surround-\ning nature. After the publication of the Brundtland Commission report in 1987, \nthe goals of ecological designers expanded to embrace the wider (but vague) \nmission of sustainability. But we know now that that word signifies more \nthan was once assumed. Sustainability is the sum total of other qualities. As \nChattanooga City Councilman, David Crockett puts it: \u201cmake it clean, green, \nsafe, and fair and it will be sustainable.\u201d The left side of that equation, how-\never, requires the elimination of the growing inequality that is a precursor to \n violence and ruined lives. It further requires rethinking our core assumptions \nabout the relation between economic growth and real progress. Ecological \ndesign, in other words, must be large enough in foresight, scope, and heart \nto include the social and economic environment in which it is embedded. In \nthat way ecological design is a radical endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2 Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to

be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of better possibilities, not just makers \nof buildings and things.\n\nA rapidly warming climate will add to the design challenges ahead. Design-\ners must reckon with a world of higher temperatures, stronger winds, more \nfrequent and larger storms, rising ocean levels, longer droughts, much larger \nrainfall events, and new diseases.7 These will likely cause interruptions in \nsupplies of food, energy, and water and could trigger social disruptions. We \nmust design with the awareness of the fragility of our civilization, as Jared \nDiamond and others warn. We must build in the ability to maintain hope and \nfunction as a society in emergency (and possibly breakdown) and lay the \nbasis for recovery.8\n\nThe Great Work of our generation is to create a post-fossil-fuel and post-\nconsumer economy that is regenerative, fair, durable, resilient, convivial, and \ndemocratic. It must be powered by renewable energy. It must be a circular \neconomy that recycles, reuses, or transforms its wastes. Of necessity it will be \nmuch more focused on essentials of food, energy, shelter, clean water, educa-\ntion, the arts, and rootedness in place and bioregion. It will be built by local \npeople who cherish and understand their places\nThe file is too long and its contents have been truncated.\n", "cloud_doc_url": null}, {"matched_text": "\u301028\u2020source\u3011", "start_idx": 3856, "end_idx": 3867, "alt": null, "type": "file", "name": "tactiq-free-transcript-iP9QF_lBOyA.txt", "id": "file-CWgzJYsc2VMZ6yS9KoMxhOoC", "source": "my_files", "snippet": "# tactiq.io free youtube transcript\n# Ray Anderson: The business logic of sustainability\n# https://www.youtube.com/watch/iP9QF_lBOyA\n\n00:00:18.330 Believe me or not, I come offering a solution\n00:00:22.330 to a very important part of this larger problem,\n00:00:26.330 with the requisite focus on climate.\n00:00:28.330 And the solution I offer\n00:00:30.330 is to the biggest culprit\n00:00:32.330 in this massive mistreatment of the earth\n00:00:36.330 by humankind,\n00:00:38.330 and the resulting decline of the biosphere.\n00:00:41.330 That culprit is business and industry,\n00:00:44.330 which happens to be where I have spent the last 52 years\n00:00:47.330 since my graduation from Georgia Tech in 1956.\n00:00:51.330 As an industrial engineer,\n00:00:53.330 cum aspiring and then successful entrepreneur.\n00:00:57.330 After founding my company, Interface, from scratch\n00:01:00.330 in 1973, 36 years ago,\n00:01:03.330 to produce carpet tiles in America\n00:01:05.330 for the business and institution markets,\n00:01:08.330 and shepherding it through start-up and survival\n00:01:11.330 to prosperity and global

dominance in its field,\n00:01:14.330 I read Paul Hawken's book,\n00:01:16.330 "The Ecology of Commerce,"\n00:01:18.330 the summer of 1994.\n00:01:21.330 In his book, Paul charges business and industry\n00:01:24.330 as, one, the major culprit\n00:01:27.330 in causing the decline of the biosphere,\n00:01:29.330 and, two, the only institution that is large enough,\n00:01:32.330 and pervasive enough, and powerful enough,\n00:01:34.330 to really lead humankind out of this mess.\n00:01:38.330 And by the way he convicted me\n00:01:41.330 as a plunderer of the earth.\n00:01:43.330 And I then challenged the people of Interface, my company,\n00:01:46.330 to lead our company and the entire industrial world to sustainability,\n00:01:50.330 which we defined as eventually operating\n00:01:52.330 our petroleum-intensive company in such a way\n00:01:55.330 as to take from the earth\n00:01:57.330 only what can be renewed by the earth, naturally and rapidly --\n00:02:01.330 not another fresh drop of oil --\n00:02:03.330 and to do no harm to the biosphere.\n00:02:07.330 Take nothing: do no harm.\n00:02:09.330 I simply said, "If Hawken is right\n00:02:11.330 and business and industry must lead,\n00:02:13.330 who will lead business and industry?\n00:02:15.330 Unless somebody leads, nobody will."\n00:02:18.330 It's axiomatic. Why not us?\n00:02:21.330 And thanks to the people of Interface,\n00:02:23.330 I have become a recovering plunderer.\n00:02:26.330 (Laughter)\n00:02:27.330 (Applause)\n00:02:32.330 I once told a Fortune Magazine writer\n00:02:36.330 that someday people like me would go to jail.\n00:02:39.330 And that became the headline of a Fortune article.\n00:02:41.330 They went on to describe me as America's greenest CEO.\n00:02:45.330 From plunderer to recovering plunderer,\n00:02:48.330 to America's greenest CEO in five years --\n00:02:51.330 that, frankly, was a pretty sad commentary\n00:02:53.330 on American CEOs in 1999.\n00:02:58.330 Asked later in the Canadian documentary, "The Corporation,"\n00:03:01.330 what I meant by the "go to jail" remark,\n00:03:04.330 I offered that theft is a crime.\n00:03:08.330 And theft of our children's future would someday be a crime.\n00:03:13.330 But I realized, for that to be true --\n00:03:15.330 for theft of our children's future to be a crime --\n00:03:18.330 there must be a clear, demonstrable alternative\n00:03:21.330 to the take-make-waste industrial system\n00:03:24.330 that so dominates our civilization,\n00:03:27.330 and is the major culprit, stealing our children's future,\n00:03:30.330 by digging up the earth\n00:03:32.330 and converting it to products that quickly become waste\n00:03:36.330 in a landfill or an incinerator --\n00:03:38.330 in short, digging up the earth and converting it to pollution.\n00:03:43.330 According to Paul and Anne Ehrlich\n00:03:45.330 and a well-known environmental impact equation,\n00:03:48.330 impact -- a bad thing --\n00:03:50.330 is the product of population, affluence and technology.\n00:03:54.330 That is, impact is generated by people,\n00:03:58.330 what they consume in their affluence,\n00:04:00.330 and how it is produced.\n00:04:03.330 And though the equation is largely subjective,\n00:04:05.330 you can perhaps quantify people, and perhaps quantify affluence,\n00:04:09.330 but technology is abusive in too many ways to quantify.\n00:04:13.330 So the equation is conceptual.\n00:04:15.330 Still it works to help us understand the problem.\n00:04:18.329 So we set out at Interface, in 1994,\n00:04:23.330 to create an example:\n00:04:25.330 to transform the way we made carpet,\n00:04:27.330 a petroleum-intensive product for materials as well as energy,\n00:04:31.330 and to transform our technologies\n00:04:33.330 so they diminished environmental impact,\n00:04:36.330 rather than multiplied it.\n00:04:39.330 Paul and Anne Ehrlich's environmental impact

equation:\n00:04:42.330 I is equal to P times A times T:\n00:04:45.330 population, affluence and technology.\n00:04:48.330 I wanted Interface to rewrite that equation so that it read\n00:04:54.330 I equals P times A divided by T.\n00:04:57.330 Now, the mathematically-minded will see immediately\n00:05:00.330 that T in the numerator increases impact -- a bad thing --\n00:05:03.330 but T in the denominator decreases impact.\n00:05:07.330 So I ask, "What would move T, technology,\n00:05:11.330 from the numerator -- call it T1 --\n00:05:13.330 where it increases impact,\n00:05:15.330 to the denominator -- call it T2 --\n00:05:18.330 where it reduces impact?\n00:05:21.330 I thought about the characteristics\n00:05:25.330 of first industrial revolution,\n00:05:27.330 T1, as we practiced it at Interface,\n00:05:30.330 and it had the following characteristics.\n00:05:34.330 Extractive: taking raw materials from the earth.\n00:05:38.330 Linear: take, make, waste.\n00:05:41.330 Powered by fossil fuel-derived energy.\n00:05:43.330 Wasteful: abusive and focused on labor productivity.\n00:05:47.330 More carpet per man-hour.\n00:05:50.330 Thinking it through, I realized that all those attributes\n00:05:53.330 must be changed to move T to the denominator.\n00:05:58.330 In the new industrial revolution extractive must be replaced by renewable;\n00:06:03.330 linear by cyclical;\n00:06:05.330 fossil fuel energy by renewable energy, sunlight;\n00:06:09.330 wasteful by waste-free;\n00:06:11.330 and abusive by benign;\n00:06:13.330 and labor productivity by resource productivity.\n00:06:17.330 And I reasoned that if we could make those transformative changes,\n00:06:21.330 and get rid of T1 altogether,\n00:06:23.330 we could reduce our impact to zero,\n00:06:26.330 including our impact on the climate.\n00:06:29.330 And that became the Interface plan in 1995,\n00:06:32.330 and has been the plan ever since.\n00:06:35.330 We have measured our progress very rigorously.\n00:06:39.330 So I can tell you how far we have come in the ensuing 12 years.\n00:06:43.330 Net greenhouse gas emissions\n00:06:45.330 down 82 percent in absolute tonnage.\n00:06:49.330 (Applause)\n00:06:53.330 Over the same span of time\n00:06:55.330 sales have increased by two-thirds and profits have doubled.\n00:06:58.330 So an 82 percent absolute reduction\n00:07:01.330 translates into a 90 percent reduction\n00:07:03.330 in greenhouse gas intensity relative to sales.\n00:07:07.330 This is the magnitude\n00:07:09.330 of the reduction the entire global technosphere\n00:07:12.330 must realize by 2050\n00:07:15.330 to avoid catastrophic climate disruption --\n00:07:18.330 so the scientists are telling us.\n00:07:21.330 Fossil fuel usage is down 60 percent per unit of production,\n00:07:25.330 due to efficiencies in renewables.\n00:07:27.330 The cheapest, most secure barrel of oil there is\n00:07:30.330 is the one not used through efficiencies.\n00:07:33.330 Water usage is down 75 percent\n00:07:36.330 in our worldwide carpet tile business.\n00:07:38.330 Down 40 percent in our broadloom carpet business,\n00:07:41.330 which we acquired in 1993\n00:07:43.330 right here in California, City of Industry,\n00:07:45.330 where water is so precious.\n00:07:48.330 Renewable or recyclable materials are 25 percent of the total, and growing rapidly.\n00:07:52.330 Renewable energy is 27 percent of our total,\n00:07:55.330 going for 100 percent.\n00:07:57.330 We have diverted 148 million pounds --\n00:08:00.330 that's 74,000 tons --\n00:08:02.330 of used carpet from landfills,\n00:08:05.330 closing the loop on material flows\n00:08:07.330 through reverse logistics\n00:08:09.330 and post-consumer recycling technologies\n00:08:12.330 that did not exist when we started 14 years ago.\n00:08:16.330 Those new cyclical technologies\n00:08:18.330 have contributed mightily to the fact that we have produced

and sold\n00:08:21.330 85 million square yards of climate-neutral carpet\n00:08:25.330 since 2004,\n00:08:27.330 meaning no net contribution to global climate disruption\n00:08:31.330 in producing the carpet throughout the supply chain,\n00:08:33.330 from mine and well head clear to end-of-life reclamation --\n00:08:38.330 independent third-party certified.\n00:08:40.330 We call it Cool Carpet.\n00:08:43.330 And it has been a powerful marketplace differentiator,\n00:08:46.330 increasing sales and profits.\n00:08:48.330 Three years ago we launched carpet tile for the home,\n00:08:52.330 under the brand Flor,\n00:08:54.330 misspelled F-L-O-R.\n00:08:57.330 You can point and click today at Flor.com\n00:08:59.330 and have Cool Carpet delivered to your front door in five days.\n00:09:03.330 It is practical, and pretty too.\n00:09:06.330 (Laughter)\n00:09:07.330 (Applause)\n00:09:13.330 We reckon that we are a bit over halfway\n00:09:15.330 to our goal: zero impact, zero footprint.\n00:09:20.330 We've set 2020 as our target year for zero,\n00:09:23.330 for reaching the top, the summit of Mount Sustainability.\n00:09:28.330 We call this Mission Zero.\n00:09:30.330 And this is perhaps the most important facet:\n00:09:33.330 we have found Mission Zero to be incredibly good for business.\n00:09:37.330 A better business model,\n00:09:40.330 a better way to bigger profits.\n00:09:42.330 Here is the business case for sustainability.\n00:09:45.330 From real life experience, costs are down, not up,\n00:09:49.330 reflecting some 400 million dollars\n00:09:51.330 of avoided costs in pursuit of zero waste --\n00:09:55.330 the first face of Mount Sustainability.\n00:09:58.330 This has paid all the costs for the transformation of Interface.\n00:10:02.330 And this dispels a myth too,\n00:10:04.330 this false choice between the environment and the economy.\n00:10:08.330 Our products are the best they've ever been,\n00:10:10.330 inspired by design for sustainability,\n00:10:12.330 an unexpected wellspring of innovation.\n00:10:16.330 Our people are galvanized around this shared higher purpose.\n00:10:19.330 You cannot beat it for attracting the best people\n00:10:21.330 and bringing them together.\n00:10:24.330 And the goodwill of the marketplace is astonishing.\n00:10:27.330 No amount of advertising, no clever marketing campaign,\n00:10:31.330 at any price, could have produced or created\n00:10:34.330 this much goodwill.\n00:10:37.330 Costs, products, people, marketplaces --\n00:10:39.330 what else is there?\n00:10:41.330 It is a better business model.\n00:10:43.330 And here is our 14-year record of sales and profits.\n00:10:48.330 There is a dip there, from 2001 to 2003:\n00:10:51.330 a dip when our sales, over a three-year period,\n00:10:53.330 were down 17 percent.\n00:10:55.330 But the marketplace was down 36 percent.\n00:10:58.330 We literally gained market share.\n00:11:00.330 We might not have survived that recession\n00:11:03.330 but for the advantages of sustainability.\n00:11:06.330 If every business were pursuing Interface plans,\n00:11:10.330 would that solve all our problems?\n00:11:12.330 I don't think so.\n00:11:14.330 I remain troubled by the revised Ehrlich equation,\n00:11:17.330 I equals P times A divided by T2.\n00:11:21.330 That A is a capital A,\n00:11:23.330 suggesting that affluence is an end in itself.\n00:11:28.330 But what if we reframed Ehrlich further?\n00:11:32.330 And what if we made A a lowercase 'a,'\n00:11:35.330 suggesting that it is a means to an end,\n00:11:37.330 and that end is happiness --\n00:11:40.330 more happiness with less stuff.\n00:11:43.330 You know that would reframe civilization itself --\n00:11:46.330 (Applause) --\n00:11:54.330 and our whole system of economics,\n00:11:57.330 if not for our species, then perhaps for the one that

succeeds us:\n00:12:03.330 the sustainable species, living on a finite earth,\n00:12:06.330 ethically, happily and ecologically\n00:12:09.330 in balance with nature\n00:12:11.330 and all her natural systems for a thousand generations,\n00:12:14.330 or 10,000 generations --\n00:12:16.330 that is to say, into the indefinite future.\n00:12:19.330 But does the earth have to wait for our extinction as a species?\n00:12:24.330 Well maybe so. But I don't think so.\n00:12:27.330 At Interface we really intend to bring this prototypical\n00:12:30.330 sustainable, zero-footprint industrial company\n00:12:33.330 fully into existence by 2020.\n00:12:36.330 We can see our way now,\n00:12:38.330 clear to the top of that mountain.\n00:12:40.330 And now the challenge is in execution.\n00:12:43.330 And as my good friend and adviser Amory Lovins says,\n00:12:46.330 "If something exists, it must be possible."\n00:12:50.330 (Laughter)\n00:12:53.330 If we can actually do it, it must be possible.\n00:12:56.330 If we, a petro-intensive company can do it, anybody can.\n00:13:00.330 And if anybody can, it follows that everybody can.\n00:13:04.330 Hawken fulfilled business and industry,\n00:13:07.330 leading humankind away from the abyss\n00:13:11.330 because, with continued unchecked decline of the biosphere,\n00:13:16.330 a very dear person is at risk here --\n00:13:19.330 frankly, an unacceptable risk.\n00:13:21.330 Who is that person?\n00:13:23.330 Not you. Not I.\n00:13:25.330 But let me introduce you to the one who is most at risk here.\n00:13:28.330 And I myself met this person in the early days of this mountain climb.\n00:13:32.330 On a Tuesday morning in March of 1996,\n00:13:36.330 I was talking to people, as I did at every opportunity back then,\n00:13:39.330 bringing them along and often not knowing whether I was connecting.\n00:13:43.330 But about five days later back in Atlanta,\n00:13:46.330 I received an email from Glenn Thomas,\n00:13:49.330 one of my people in the California meeting.\n00:13:51.330 He was sending me an original poem\n00:13:53.330 that he had composed after our Tuesday morning together.\n00:13:56.330 And when I read it it was one of the most uplifting moments of my life.\n00:14:00.330 Because it told me, by God, one person got it.\n00:14:04.330 Here is what Glenn wrote. And here is that person, most at risk.\n00:14:08.330 Please meet "Tomorrow's Child."\n00:14:12.330 "Without a name, an unseen face, and knowing not your time or place,\n00:14:16.330 Tomorrow's child, though yet unborn,\n00:14:19.330 I met you first last Tuesday morn.\n00:14:22.330 A wise friend introduced us two.\n00:14:24.330 And through his sobering point of view\n00:14:26.330 I saw a day that you would see, a day for you but not for me.\n00:14:31.330 Knowing you has changed my thinking.\n00:14:33.330 For I never had an inkling\n00:14:35.330 that perhaps the things I do might someday,\n00:14:38.330 somehow threaten you.\n00:14:41.330 Tomorrow's child, my daughter, son,\n00:14:43.330 I'm afraid I've just begun to think of you and of your good,\n00:14:45.330 though always having known I should.\n00:14:49.330 Begin, I will.\n00:14:51.330 The way the cost of what I squander, what is lost,\n00:14:54.330 if ever I forget that you\n00:14:56.330 will someday come and live here too."\n00:15:00.330 Well, every day of my life since,\n00:15:02.330 "Tomorrow's Child" has spoken to me\n00:15:04.330 with one simple but profound message,\n00:15:06.330 which I presume to share with you.\n00:15:08.330 We are, each and every one,\n00:15:10.330 a part of the web of life.\n00:15:13.330 The continuum of humanity, sure, but in a larger sense, the web of life itself.\n00:15:17.330 And we have a choice to make\n00:15:19.330 during our brief, brief visit\n00:15:21.330 to this beautiful blue and green living

planet:\n00:15:25.330 to hurt it or to help it.\n00:15:28.330 For you, it's your call.\n00:15:31.330 Thank you.\n00:15:33.330 (Applause)\n", "cloud_doc_url": null}, {"matched_text": "\u301030\u2020source\u3011", "start_idx": 3867, "end_idx": 3878, "alt": null, "type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQvOsZY", "source": "my_files", "snippet": "\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen Haggard\n\nRegenesis\n\n\n\nCover Design: Wiley\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael Sotnikov, \nCheonggyecheong Festival; Courtesy of Playa Viva \u00a9 David Leventhal; Teachers \u00a9 Regenesis Group; \u00a9 Sasaki \nAssociates, Las Salinas Master Plan\n\nThis book is printed on acid-free paper. \n\nCopyright \u00a9 2016 by John Wiley & Sons, Inc. All rights reserved\n\nPublished by John Wiley & Sons, Inc., Hoboken, New Jersey\nPublished simultaneously in Canada\n\nNo part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any \nmeans, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section \n107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or \nauthorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood \nDrive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the web at www.copyright.com. Requests to \nthe Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River \nStreet, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at www.wiley.com/go/permissions.\n\nLimit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this \nbook, they make no representations or warranties with the respect to the accuracy or completeness of the contents \nof this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No \nwarranty may be created or extended by sales representatives or written sales materials. The advice and strategies \ncontained herein may not be suitable for your situation. You should consult with a professional where appropriate. \nNeither the publisher nor the author shall be liable for damages arising herefrom.\n\nFor general information about our other products and services, please contact our Customer Care Department \nwithin the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.\n\nWiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with \nstandard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to \nmedia such as a CD or DVD that is not included in the version you purchased, you may download this material at \nhttp://booksupport.wiley.com. For more information about Wiley products, visit www.wiley.com.\n\nLibrary of Congress Cataloging-in-Publication Data: \n\n9781118972861 (pbk); 978-1-118-97291-5 (ebk);\n978-1-118-97292-2 (ebk); 978-1-119-14969-9 (ebk)\n\nPrinted in the United States of America\n\n10 9 8 7 6 5 4 3 2 1\n\nhttp://www.copyright.com\nhttp://www.wiley.com/go/permissions\nhttp://booksupport.wiley.com\nhttp://www.wiley.com\n\n\niii\n\nContents\n\nForeword . . . . . v\n\nAcknowledgments . . . . . xi\n\nChanging Our Minds . . . . .

foolish. But the \n failure of foresight\u2014the inability to read the hand-writing on the wall\u2014is \neven more so. Designers of all kinds work in the conflicted space between \nthese two poles. Their goal is to improve small parts of a rapidly changing \nworld with the tools of form, scale, materials, energy, water, color, landscape, \nand the creativity that is found most often at the grassroots level. But what \nneeds to be improved?\n\nThe short answer is \u201ca great deal,\u201d including an energy system that is rapidly \ndestabilizing the climate, an economy driving tens of thousands of species to \nextinction, a political system that sanctions gross inequality, an uncivil society, \nthe growing autism toward the natural world, and a global system mired in \nconflict. These are related problems, parts of a larger civilizational crisis with \nroots traceable to the seventeenth century authors of the mechanical world \nview. But there are deeper pathologies with footprints back to our ancient \nschizophrenia toward the natural world that had to be tamed a bit before it \ncould be appreciated.\n\nDesigners, however, typically do not work at the macro scale of civilization \nfor good reasons. Whether as architecture, engineering, materials, or land-\nscapes, design is bounded by the minute particulars of projects in their spe-\ncific social, cultural, and historical context. As a result designers work from the \nbottom up on projects at the building, neighborhood, and city scales. But the \nbig problems mentioned above are in large part the sum total of bad design \n(including that of public policies) at lower levels. There are many reasons for \nbad design, not the least of which is a professional focus on form-making, \noften oblivious to other consequences.\n\nBeginning in the 1970s a few renegade architects like Sim Van der Ryn in \nCalifornia became concerned about the collateral environmental impacts \nof the design professions. Van der Ryn envisioned ecological design as the \n\n\nvi Foreword\n\n calibration of buildings with their places, which required further integral \nunderstanding of landscapes, energy flows, waste cycling, materials, sun-\nlight, water, and ecological processes. Ecological design, in other words, \naims to calibrate human actions with the way natural systems work as par-\nticular places, larger landscapes, and whole ecologies. It aims to work with, \nnot against, the flows of energy and natural cycling of materials. The goal, \nin short, was to reduce environmental impacts of the \u201cbuilt environment\u201d \nin a civilization that prized economic expansion above all else with hardly a \nthought for the morrow.\n\nWhat began so modestly in the 1970s has rapidly grown into a global move-\nment to harmonize buildings, neighborhoods, and cities with the surround-\ning nature. After the publication of the Brundtland Commission report in 1987, \nthe goals of ecological designers expanded to embrace the wider (but vague) \nmission of sustainability. But we know now that that word signifies more \nthan was once assumed. Sustainability is the sum total of other qualities. As \nChattanooga City Councilman, David Crockett puts it: \u201cmake it clean, green, \nsafe, and fair and it will be sustainable.\u201d The left side of that equation, how-\never, requires the elimination of the growing inequality that is a precursor to \n violence and ruined lives. It further requires rethinking our core assumptions \nabout the relation between economic growth and real progress. Ecological \ndesign, in other words, must be large enough in foresight, scope, and heart \nto include the social and economic environment in which it is embedded. In \nthat way ecological design is a radical endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives

to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2 Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of better possibilities, not just makers \nof buildings and things.\n\nA rapidly warming climate will add to the design challenges ahead. Design-\ners must reckon with a world of higher temperatures, stronger winds, more \nfrequent and larger storms, rising ocean levels, longer droughts, much larger \nrainfall events, and new diseases.7 These

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part of that is the good news that's there,\n00:02:13.000 because the news is the news of abundance,\n00:02:16.000 and not the news of limits,\n00:02:18.000 and I think as our culture tortures itself now\n00:02:23.000 with tyrannies and concerns over limits and fear,\n00:02:28.000 we can add this other dimension of abundance that is coherent,\n00:02:33.000 driven by the sun, and start to imagine\n00:02:35.000 what that would be like to share."\n00:02:42.000 That was a nice thing to get.\n00:02:44.000 That was one sentence.\n00:02:48.000 Henry James would be proud.\n00:02:50.000 This is -- I put it down at the bottom,\n00:02:52.000 but that was extemporaneous, obviously.\n00:02:55.000 The fundamental issue is that, for me,\n00:02:58.000 design is the first signal of human intentions.\n00:03:00.000 So what are our intentions, and what would our intentions be --\n00:03:04.000 if we wake up in the morning, we have designs on the world --\n00:03:07.000 well, what would our intention be as a species\n00:03:09.000 now that we're the dominant species?\n00:03:11.000 And it's not just stewardship and dominion debate,\n00:03:14.000 because really, dominion is implicit in stewardship --\n00:03:20.000 because how could you dominate something you had killed?\n00:03:22.000 And stewardship's implicit in dominion,\n00:03:24.000 because you can't be steward of something if you can't dominate it.\n00:03:26.000 So the question is, what is the first question for designers?\n00:03:32.000 Now, as guardians -- let's say the state, for example,\n00:03:35.000 which reserves the right to kill, the right to be duplicitous and so on --\n00:03:40.000 the question we're asking the guardian at this point is\n00:03:43.000 are we meant, how are we meant,\n00:03:45.000 to secure local societies, create world peace\n00:03:47.000 and save the environment?\n00:03:49.000 But I don't know that that's the common debate.\n00:03:52.000 Commerce, on the other hand, is relatively quick,\n00:03:56.000 essentially creative, highly effective and efficient,\n00:03:58.000 and fundamentally honest, because we can't exchange\n00:04:01.000 value for very long if we don't trust each other.\n00:04:05.000 So we use the tools of commerce primarily for our work,\n00:04:07.000 but the question we bring to it is,\n00:04:09.000 how do we love all the children of all species for all time?\n00:04:13.000 And so we start our designs with that question.\n00:04:16.000 Because what we realize today is that modern culture\n00:04:18.000 appears to have adopted a strategy of tragedy.\n00:04:21.000 If we come here and say, "Well, I didn't intend\n00:04:23.000 to cause global warming on the way here,"\n00:04:24.000 and we say, "That's not part of my plan,"\n00:04:26.000 then we realize it's part of our de facto plan.\n00:04:29.000 Because it's the thing that's happening because we have no other plan.\n00:04:32.000 And I was at the White House for President Bush,\n00:04:34.000 meeting with every federal department and agency,\n00:04:36.000 and I pointed out that they appear to have no plan.\n00:04:40.000 If the end game is global warming, they're doing great.\n00:04:42.000 If the end game is mercury toxification of our children\n00:04:45.000 downwind of coal fire plants as they scuttled the Clean Air Act,\n00:04:48.000 then I see that our education programs should be explicitly defined as,\n00:04:52.000 "Brain death for all children. No child left behind."\n00:04:54.000 (Applause)\n00:04:58.000 So, the question is, how many federal officials\n00:05:02.000 are ready to move to Ohio and Pennsylvania with their families?\n00:05:05.000 So if you don't have an endgame of something delightful,\n00:05:09.000 then you're just moving chess pieces around,\n00:05:11.000 if you don't know you're taking the

king.\n00:05:12.000 So perhaps we could develop a strategy of change,\n00:05:15.000 which requires humility. And in my business as an architect,\n00:05:18.000 it's unfortunate the word "humility" and the word "architect"\n00:05:22.000 have not appeared in the same paragraph since "The Fountainhead."\n00:05:25.000 So if anybody here has trouble with the concept of design humility,\n00:05:30.000 reflect on this -- it took us 5,000 years\n00:05:33.000 to put wheels on our luggage.\n00:05:37.000 So, as Kevin Kelly pointed out, there is no endgame.\n00:05:42.000 There is an infinite game, and we're playing in that infinite game.\n00:05:46.000 And so we call it "cradle to cradle,"\n00:05:48.000 and our goal is very simple.\n00:05:49.000 This is what I presented to the White House.\n00:05:51.000 Our goal is a delightfully diverse, safe, healthy and just world,\n00:05:54.000 with clean air, clean water, soil and power --\n00:05:57.000 economically, equitably, ecologically and elegantly enjoyed, period.\n00:06:01.000 (Applause)\n00:06:04.000 What don't you like about this?\n00:06:07.000 Which part of this don't you like?\n00:06:09.000 So we realized we want full diversity,\n00:06:11.000 even though it can be difficult to remember what De Gaulle said\n00:06:14.000 when asked what it was like to be President of France.\n00:06:16.000 He said, "What do you think it's like trying to run a country with 400 kinds of cheese?"\n00:06:20.000 But at the same time, we realize that our products are not safe and healthy.\n00:06:23.000 So we've designed products\n00:06:25.000 and we analyzed chemicals down to the parts per million.\n00:06:27.000 This is a baby blanket by Pendleton that will give your child nutrition\n00:06:30.000 instead of Alzheimer's later in life.\n00:06:32.000 We can ask ourselves, what is justice,\n00:06:34.000 and is justice blind, or is justice blindness?\n00:06:38.000 And at what point did that uniform turn from white to black?\n00:06:43.000 Water has been declared a human right by the United Nations.\n00:06:46.000 Air quality is an obvious thing to anyone who breathes.\n00:06:48.000 Is there anybody here who doesn't breathe?\n00:06:51.000 Clean soil is a critical problem -- the nitrification, the dead zones\n00:06:54.000 in the Gulf of Mexico.\n00:06:56.000 A fundamental issue that's not being addressed.\n00:06:58.000 We've seen the first form of solar energy\n00:07:00.000 that's beat the hegemony of fossil fuels in the form of wind\n00:07:03.000 here in the Great Plains, and so that hegemony is leaving.\n00:07:06.000 And if we remember Sheikh Yamani when he formed OPEC,\n00:07:09.000 they asked him, "When will we see the end of the age of oil?"\n00:07:12.000 I don't know if you remember his answer, but it was,\n00:07:15.000 "The Stone Age didn't end because we ran out of stones."\n00:07:19.000 We see that companies acting ethically in this world\n00:07:23.000 are outperforming those that don't.\n00:07:24.000 We see the flows of materials in a rather terrifying prospect.\n00:07:29.000 This is a hospital monitor from Los Angeles, sent to China.\n00:07:32.000 This woman will expose herself to toxic phosphorous,\n00:07:35.000 release four pounds of toxic lead into her childrens' environment,\n00:07:38.000 which is from copper.\n00:07:40.000 On the other hand, we see great signs of hope.\n00:07:42.000 Here's Dr. Venkataswamy in India, who's figured out\n00:07:45.000 how to do mass-produced health.\n00:07:47.000 He has given eyesight to two million people for free.\n00:07:51.000 We see in our material flows that car steels don't become car steel again\n00:07:54.000 because of the contaminants of the coatings --\n00:07:56.000 bismuth, antimony, copper and so on.\n00:07:58.000 They become building steel.\n00:07:59.000 On the other hand, we're working with Berkshire

Hathaway,\n00:08:01.000 Warren Buffett and Shaw Carpet,\n00:08:04.000 the largest carpet company in the world.\n00:08:05.000 We've developed a carpet that is continuously recyclable,\n00:08:08.000 down to the parts per million.\n00:08:11.000 The upper is Nylon 6 that can go back to caprolactam,\n00:08:14.000 the bottom, a polyolephine -- infinitely recyclable thermoplastic.\n00:08:17.000 Now if I was a bird, the building on my left is a liability.\n00:08:21.000 The building on my right, which is our corporate campus for The Gap\n00:08:24.000 with an ancient meadow, is an asset -- its nesting grounds.\n00:08:29.000 Here's where I come from. I grew up in Hong Kong,\n00:08:31.000 with six million people in 40 square miles.\n00:08:33.000 During the dry season, we had four hours of water every fourth day.\n00:08:37.000 And the relationship to landscape was that of farmers who have been\n00:08:40.000 farming the same piece of ground for 40 centuries.\n00:08:44.000 You can't farm the same piece of ground for 40 centuries\n00:08:46.000 without understanding nutrient flow.\n00:08:49.000 My childhood summers were in the Puget Sound of Washington,\n00:08:52.000 among the first growth and big growth.\n00:08:54.000 My grandfather had been a lumberjack in the Olympics,\n00:08:56.000 so I have a lot of tree karma I am working off.\n00:09:01.000 I went to Yale for graduate school,\n00:09:03.000 studied in a building of this style by Le Corbusier,\n00:09:05.000 affectionately known in our business as Brutalism.\n00:09:09.000 If we look at the world of architecture,\n00:09:12.000 we see with Mies' 1928 tower for Berlin,\n00:09:15.000 the question might be, "Well, where's the sun?"\n00:09:17.000 And this might have worked in Berlin, but we built it in Houston,\n00:09:20.000 and the windows are all closed. And with most products\n00:09:23.000 appearing not to have been designed for indoor use,\n00:09:25.000 this is actually a vertical gas chamber.\n00:09:28.000 When I went to Yale, we had the first energy crisis,\n00:09:31.000 and I was designing the first solar-heated house in Ireland\n00:09:33.000 as a student, which I then built --\n00:09:35.000 which would give you a sense of my ambition.\n00:09:37.000 And Richard Meier, who was one of my teachers,\n00:09:39.000 kept coming over to my desk to give me criticism,\n00:09:41.000 and he would say, "Bill, you've got to understand- --\n00:09:43.000 solar energy has nothing to do with architecture."\n00:09:51.000 I guess he didn't read Vitruvius.\n00:09:53.000 In 1984, we did the first so-called "green office" in America\n00:09:57.000 for Environmental Defense.\n00:09:58.000 We started asking manufacturers what were in their materials.\n00:10:01.000 They said, "They're proprietary, they're legal, go away."\n00:10:03.000 The only indoor quality work done in this country at that time\n00:10:05.000 was sponsored by R.J. Reynolds Tobacco Company,\n00:10:08.000 and it was to prove there was no danger\n00:10:09.000 from secondhand smoke in the workplace.\n00:10:12.000 So, all of a sudden, here I am, graduating from high school in 1969,\n00:10:16.000 and this happens, and we realize that "away" went away.\n00:10:19.000 Remember we used to throw things away, and we'd point to away?\n00:10:23.000 And yet, NOAA has now shown us, for example --\n00:10:25.000 you see that little blue thing above Hawaii?\n00:10:27.000 That's the Pacific Gyre.\n00:10:28.000 It was recently dragged for plankton by scientists,\n00:10:30.000 and they found six times as much plastic as plankton.\n00:10:34.000 When asked, they said, "It's kind of like a giant toilet that doesn't flush."\n00:10:39.000 Perhaps that's away.\n00:10:40.000 So we're looking for the design rules of this --\n00:10:42.000 this is the highest biodiversity of trees in the world, Irian

Jaya,\n00:10:44.000 259 species of tree, and we described this\n00:10:48.000 in the book, "Cradle to Cradle."\n00:10:49.000 The book itself is a polymer. It is not a tree.\n00:10:53.000 That's the name of the first chapter -- "This Book is Not a Tree."\n00:10:56.000 Because in poetics, as Margaret Atwood pointed out,\n00:10:59.000 "we write our history on the skin of fish\n00:11:01.000 with the blood of bears."\n00:11:04.000 And with so much polymer, what we really need\n00:11:05.000 is technical nutrition, and to use something\n00:11:08.000 as elegant as a tree -- imagine this design assignment:\n00:11:11.000 Design something that makes oxygen, sequesters carbon,\n00:11:13.000 fixes nitrogen, distills water, accrues solar energy as fuel,\n00:11:17.000 makes complex sugars and food, creates microclimates,\n00:11:21.000 changes colors with the seasons and self-replicates.\n00:11:27.000 Well, why don't we knock that down and write on it?\n00:11:29.000 (Laughter)\n00:11:35.000 So, we're looking at the same criteria\n00:11:37.000 as most people -- you know, can I afford it?\n00:11:39.000 Does it work? Do I like it?\n00:11:41.000 We're adding the Jeffersonian agenda, and I come from Charlottesville,\n00:11:43.000 where I've had the privilege of living in a house designed by Thomas Jefferson.\n00:11:47.000 We're adding life, liberty and the pursuit of happiness.\n00:11:53.000 Now if we look at the word "competition,"\n00:11:54.000 I'm sure most of you've used it.\n00:11:56.000 You know, most people don't realize it comes from\n00:11:57.000 the Latin competere, which means strive together.\n00:12:00.000 It means the way Olympic athletes train with each other.\n00:12:03.000 They get fit together, and then they compete.\n00:12:06.000 The Williams sisters compete -- one wins Wimbledon.\n00:12:08.000 So we've been looking at the idea of competition\n00:12:11.000 as a way of cooperating in order to get fit together.\n00:12:15.000 And the Chinese government has now --\n00:12:16.000 I work with the Chinese government now --\n00:12:18.000 has taken this up.\n00:12:20.000 We're also looking at survival of the fittest,\n00:12:22.000 not in just competition terms in our modern context\n00:12:24.000 of destroy the other or beat them to the ground,\n00:12:27.000 but really to fit together and build niches\n00:12:29.000 and have growth that is good.\n00:12:31.000 Now most environmentalists don't say growth is good,\n00:12:33.000 because, in our lexicon, asphalt is two words: assigning blame.\n00:12:38.000 But if we look at asphalt as our growth,\n00:12:41.000 then we realize that all we're doing is destroying\n00:12:43.000 the planetary's fundamental underlying operating system.\n00:12:47.000 So when we see E equals mc squared come along, from a poet's perspective,\n00:12:52.000 we see energy as physics, chemistry as mass,\n00:12:54.000 and all of a sudden, you get this biology.\n00:12:56.000 And we have plenty of energy, so we'll solve that problem,\n00:12:59.000 but the biology problem's tricky, because as we put through\n00:13:02.000 all these toxic materials that we disgorge,\n00:13:05.000 we will never be able to recover that.\n00:13:07.000 And as Francis Crick pointed out, nine years\n00:13:09.000 after discovering DNA with Mr. Watson,\n00:13:12.000 that life itself has to have growth as a precondition --\n00:13:16.000 it has to have free energy, sunlight\n00:13:18.000 and it needs to be an open system of chemicals.\n00:13:21.000 So we're asking for human artifice to become a living thing,\n00:13:24.000 and we want growth, we want free energy from sunlight\n00:13:26.000 and we want an open metabolism for chemicals.\n00:13:29.000 Then, the question becomes not growth or no growth,\n00:13:31.000 but what do you want to grow?\n00:13:34.000 So instead of just

growing destruction,\n00:13:36.000 we want to grow the things that we might enjoy,\n00:13:38.000 and someday the FDA will allow us to make French cheese.\n00:13:41.000 So therefore, we have these two metabolisms,\n00:13:45.000 and I worked with a German chemist, Michael Braungart,\n00:13:47.000 and we've identified the two fundamental metabolisms.\n00:13:49.000 The biological one I'm sure you understand,\n00:13:51.000 but also the technical one, where we take materials\n00:13:53.000 and put them into closed cycles.\n00:13:55.000 We call them biological nutrition and technical nutrition.\n00:13:58.000 Technical nutrition will be in an order of magnitude of biological nutrition.\n00:14:02.000 Biological nutrition can supply about 500 million humans,\n00:14:05.000 which means that if we all wore Birkenstocks and cotton,\n00:14:07.000 the world would run out of cork and dry up.\n00:14:10.000 So we need materials in closed cycles,\n00:14:12.000 but we need to analyze them down to the parts per million\n00:14:14.000 for cancer, birth defects, mutagenic effects,\n00:14:17.000 disruption of our immune systems, biodegradation, persistence,\n00:14:20.000 heavy metal content, knowledge of how we're making them\n00:14:23.000 and their production and so on.\n00:14:25.000 Our first product was a textile where we analyzed 8,000 chemicals\n00:14:29.000 in the textile industry.\n00:14:30.000 Using those intellectual filters, we eliminated [7,962.]\n00:14:35.000 We were left with 38 chemicals.\n00:14:37.000 We have since databased the 4000 most commonly used chemicals\n00:14:40.000 in human manufacturing, and we're releasing this database into the public in six weeks.\n00:14:45.000 So designers all over the world can analyze their products\n00:14:47.000 down to the parts per million for human and ecological health.\n00:14:52.000 (Applause)\n00:14:57.000 We've developed a protocol so that companies can send\n00:15:00.000 these same messages all the way through their supply chains,\n00:15:03.000 because when we asked most companies we work with -- about a trillion dollars\n00:15:06.000 -- and say, "Where does your stuff come from?" They say, "Suppliers."\n00:15:08.000 "And where does it go?"\n00:15:10.000 "Customers."\n00:15:11.000 So we need some help there.\n00:15:12.000 So the biological nutrients, the first fabrics --\n00:15:14.000 the water coming out was clean enough to drink.\n00:15:16.000 Technical nutrients -- this is for Shaw Carpet, infinitely reusable carpet.\n00:15:20.000 Here's nylon going back to caprolactam back to carpet.\n00:15:23.000 Biotechnical nutrients -- the Model U for Ford Motor,\n00:15:26.000 a cradle to cradle car -- concept car.\n00:15:28.000 Shoes for Nike, where the uppers are polyesters, infinitely recyclable,\n00:15:32.000 the bottoms are biodegradable soles.\n00:15:35.000 Wear your old shoes in, your new shoes out.\n00:15:37.000 There is no finish line.\n00:15:39.000 The idea here of the car is that some of the materials\n00:15:41.000 go back to the industry forever, some of the materials go back to soil --\n00:15:44.000 it's all solar-powered.\n00:15:46.000 Here's a building at Oberlin College we designed\n00:15:48.000 that makes more energy than it needs to operate and purifies its own water.\n00:15:52.000 Here's a building for The Gap, where the ancient grasses\n00:15:54.000 of San Bruno, California, are on the roof.\n00:15:58.000 And this is our project for Ford Motor Company.\n00:16:00.000 It's the revitalization of the River Rouge in Dearborn.\n00:16:02.000 This is obviously a color photograph.\n00:16:06.000 These are our tools. These are how we sold it to Ford.\n00:16:10.000 We saved Ford 35 million dollars doing it this way, day one,\n00:16:13.000 which is the equivalent of the Ford Taurus\n00:16:15.000 at a four percent margin of an order for 900 million dollars worth of cars.\n00:16:19.000 Here

it is. It's the world's largest green roof, 10 and a half acres.\n00:16:22.000 This is the roof, saving money,\n00:16:25.000 and this is the first species to arrive here. These are killdeer.\n00:16:29.000 They showed up in five days.\n00:16:32.000 And we now have 350-pound auto workers\n00:16:34.000 learning bird songs on the Internet.\n00:16:38.000 We're developing now protocols for cities --\n00:16:40.000 that's the home of technical nutrients.\n00:16:42.000 The country -- the home of biological. And putting them together.\n00:16:45.000 And so I will finish by showing you a new city\n00:16:47.000 we're designing for the Chinese government.\n00:16:49.000 We're doing 12 cities for China right now,\n00:16:52.000 based on cradle to cradle as templates.\n00:16:54.000 Our assignment is to develop protocols for the housing\n00:16:57.000 for 400 million people in 12 years.\n00:16:59.000 We did a mass energy balance -- if they use brick,\n00:17:01.000 they will lose all their soil and burn all their coal.\n00:17:04.000 They'll have cities with no energy and no food.\n00:17:06.000 We signed a Memorandum of Understanding --\n00:17:08.000 here's Madam Deng Nan, Deng Xiaoping's daughter --\n00:17:10.000 for China to adopt cradle to cradle.\n00:17:12.000 Because if they toxify themselves, being the lowest-cost producer,\n00:17:16.000 send it to the lowest-cost distribution -- Wal-Mart --\n00:17:18.000 and then we send them all our money, what we'll discover is that\n00:17:21.000 we have what, effectively, when I was a student,\n00:17:24.000 was called mutually assured destruction.\n00:17:27.000 Now we do it by molecule. These are our cities.\n00:17:30.000 We're building a new city next to this city; look at that landscape.\n00:17:33.000 This is the site.\n00:17:35.000 We don't normally do green fields, but this one is about to be built,\n00:17:39.000 so they brought us in to intercede.\n00:17:41.000 This is their plan.\n00:17:43.000 It's a rubber stamp grid that they laid right on that landscape.\n00:17:46.000 And they brought us in and said, "What would you do?"\n00:17:49.000 This is what they would end up with, which is another color photograph.\n00:17:53.000 So this is the existing site, so this is what it looks like now,\n00:17:56.000 and here's our proposal.\n00:17:58.000 (Applause)\n00:18:02.000 So the way we approached this\n00:18:04.000 is we studied the hydrology very carefully.\n00:18:06.000 We studied the biota, the ancient biota,\n00:18:08.000 the current farming and the protocols.\n00:18:10.000 We studied the winds and the sun to make sure everybody in the city\n00:18:12.000 will have fresh air, fresh water and direct sunlight\n00:18:18.000 in every single apartment at some point during the day.\n00:18:21.000 We then take the parks and lay them out as ecological infrastructure.\n00:18:25.000 We lay out the building areas.\n00:18:28.000 We start to integrate commercial and mixed use\n00:18:29.000 so the people all have centers and places to be.\n00:18:32.000 The transportation is all very simple,\n00:18:34.000 everybody's within a five-minute walk of mobility.\n00:18:37.000 We have a 24-hour street, so that there's always a place that's alive.\n00:18:42.000 The waste systems all connect.\n00:18:44.000 If you flush a toilet, your feces will go to the sewage treatment plants,\n00:18:49.000 which are sold as assets, not liabilities.\n00:18:51.000 Because who wants the fertilizer factory that makes natural gas?\n00:18:55.000 The waters are all taken in to construct the wetlands for habitat restorations.\n00:19:00.000 And then it makes natural gas, which then goes back into the city\n00:19:04.000 to power the fuel for the cooking for the city.\n00:19:08.000 So this is -- these are fertilizer gas plants.\n00:19:10.000 And then the compost is all taken back\n00:19:13.000 to the roofs of the city, where we've got

farming,\n00:19:15.000 because what we've done is lifted up the city,\n00:19:19.000 the landscape, into the air to -- to restore the native landscape\n00:19:26.000 on the roofs of the buildings.\n00:19:28.000 The solar power of all the factory centers\n00:19:31.000 and all the industrial zones with their light roofs powers the city.\n00:19:34.000 And this is the concept for the top of the city.\n00:19:36.000 We've lifted the earth up onto the roofs.\n00:19:40.000 The farmers have little bridges to get from one roof to the next.\n00:19:44.000 We inhabit the city with work/live space on all the ground floors.\n00:19:48.000 And so this is the existing city, and this is the new city.\n00:19:53.000 (Applause)\n", "cloud_doc_url": null}, {"matched_text": "\u301030\u2020source\u3011", "start_idx": 4818, "end_idx": 4829, "alt": null, "type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQv0sZY", "source": "my_files", "snippet": "\n\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen Haggard\n\nRegenesis\n\n\n\nCover Design: Wiley\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael Sotnikov, \nCheonggyecheong Festival; Courtesy of Playa Viva \u00a9 David Leventhal; Teachers \u00a9 Regenesis Group; \u00a9 Sasaki \nAssociates, Las Salinas Master Plan\n\nThis book is printed on acid-free paper. \n\nCopyright \u00a9 2016 by John Wiley & Sons, Inc. All rights reserved\n\nPublished by John Wiley & Sons, Inc., Hoboken, New Jersey\nPublished simultaneously in Canada\n\nNo part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any \nmeans, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section \n107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or \nauthorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood \nDrive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the web at www.copyright.com. Requests to \nthe Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River \nStreet, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at www.wiley.com/go/permissions.\n\nLimit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this \nbook, they make no representations or warranties with the respect to the accuracy or completeness of the contents \nof this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No \nwarranty may be created or extended by sales representatives or written sales materials. The advice and strategies \ncontained herein may not be suitable for your situation. You should consult with a professional where appropriate. \nNeither the publisher nor the author shall be liable for damages arising herefrom.\n\nFor general information about our other products and services, please contact our Customer Care Department \nwithin the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.\n\nWiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with \nstandard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to \nmedia such as a CD or DVD that is not included in the version you purchased, you may download this material at \nhttp://booksupport.wiley.com. For more information about Wiley products, visit www.wiley.com.\n\nLibrary of Congress Cataloging-in-Publication Data:\n\n9781118972861 (pbk); 978-1-118-97291-5 (ebk);\n978-1-118-97292-2 (ebk); 978-1-119-

14969-9 (ebk)\n\nPrinted in the United States of America\n\n10 9 8 7 6 5 4 3 2 1\n\nhttp://www.copyright.com\nhttp://www.wiley.com/go/permissions\nhttp://booksupport.wiley.com\nhttp://www.wiley.com\n\n\niii\n\nContents\n\n

ruined lives. It further requires rethinking our core assumptions \nabout the relation between economic growth and real progress. Ecological \ndesign, in other words, must be large enough in foresight, scope, and heart \nto include the social and economic environment in which it is embedded. In \nthat way ecological design is a radical endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2 Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to

neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of better possibilities, not just makers \nof buildings and things.\n\nA rapidly warming climate will add to the design challenges ahead. Design-\ners must reckon with a world of higher temperatures, stronger winds, more \nfrequent and larger storms, rising ocean levels, longer droughts, much larger \nrainfall events, and new diseases.7 These will likely cause interruptions in \nsupplies of food, energy, and water and could trigger social disruptions. We \nmust design with the awareness of the fragility of our civilization, as Jared \nDiamond and others warn. We must build in the ability to maintain hope and \nfunction as a society in emergency (and possibly breakdown) and lay the \nbasis for recovery.8\n\nThe Great Work of our generation is to create a post-fossil-fuel and post-\nconsumer economy that is regenerative, fair, durable, resilient, convivial, and \ndemocratic. It must be powered by renewable energy. It must be a circular \neconomy that recycles, reuses, or transforms its wastes. Of necessity it will be \nmuch more focused on essentials of food, energy, shelter, clean water, educa-\ntion, the arts, and rootedness in place and bioregion. It will be built by local \npeople who cherish and understand their places\nThe file is too long and its contents have been truncated.\n", "cloud_doc_url": null}]}, "recipient": "all", "channel": null}, "parent": "711e9f0b-17f7-497e-bfb1-1dd60d500191", "children": ["aaa26142-1a99-4abe-a393-de10f230e715"]}, "aaa26142-1a99-4abe-a393-de10f230e715": {"id": "aaa26142-1a99-4abe-a393-de10f230e715", "message": {"id": "aaa26142-1a99-4abe-a393-de10f230e715", "author": {"role": "user", "name": null, "metadata": {}}, "create_time": 1717133271.735878, "update_time": null, "content": {"content_type": "text", "parts": ["where are the numbered in text citations? "]}, "status": "finished_successfully", "end_turn": null, "weight": 1.0, "metadata": {"targeted_reply": "**Pitching Sustainability to a Conservative/Capitalist Client in a Resource-Intensive Industry**\n\nWhen discussing the adoption of sustainable practices with a client from a resource-intensive field such as natural gas, oil, plastic production, or cattle ranching, it is essential to frame the conversation in terms that resonate with their conservative or capitalist values. This approach means focusing on the financial benefits, risk management, and regulatory compliance, while subtly appealing to their legacy and long-term strategic goals.\n\nFirstly, sustainability can be presented as a pathway to significant cost savings and efficiency improvements. For instance, implementing energy-efficient technologies can considerably reduce operational costs. Upgrading to more efficient machinery lowers energy consumption, resulting in direct savings on utility bills. Moreover, reducing waste and optimizing resource use can lower raw material costs. For example, in the oil industry, better extraction technologies can minimize waste, thereby improving yield and profitability\u200b\u200b.\n\nIn terms of market differentiation and consumer demand, adopting sustainable practices can enhance brand value. Consumers are increasingly favoring companies with strong sustainability credentials, which can lead to enhanced brand loyalty and a premium on products. A study by Nielsen found that 66% of consumers are willing to pay more for sustainable goods\u200b\u200b. Furthermore, sustainable practices can open doors to new markets, including those with stringent environmental regulations, crucial for expanding market share and staying competitive globally.\n\nRisk management and regulatory benefits also play a crucial role in the argument for sustainability. Adopting sustainable practices helps ensure compliance

with existing and upcoming regulations, thereby avoiding fines and legal issues. For example, regulations on emissions are tightening worldwide, and early adoption of cleaner technologies can prevent future compliance costs. Additionally, companies with strong sustainability records often enjoy lower insurance premiums and better financing terms, as they are perceived as lower risk by insurers and investors\u200b\u200b.\n\nAppealing to the client\u2019s long-term strategy and legacy can further strengthen the argument. Sustainable practices ensure the long-term availability of natural resources, which is critical for the ongoing operations of resource-intensive industries. This foresight can safeguard the company\u2019s future and maintain its competitive edge. Additionally, younger generations of workers prefer to work for companies that are environmentally responsible, enhancing the company's ability to attract top talent, which is crucial for innovation and growth\u200b\u200b.\n\nHighlighting the positive impact on legacy and corporate responsibility is another powerful argument. Sustainable practices offer the opportunity to leave a positive legacy that benefits future generations, framing it as a way to protect the environment while ensuring the prosperity of the company and its stakeholders. Enhanced reputation through sustainable practices leads to stronger community relations and better public perception, particularly important during times of scrutiny or crisis management.\n\nTo frame the conversation effectively, it is crucial to adopt a data-driven approach. Presenting evidence through case studies and data demonstrating the financial benefits of sustainability can be compelling. For instance, showcasing how a competitor reduced costs and increased profits through sustainable practices can illustrate the practical benefits. Discussing how sustainability metrics and key performance indicators (KPIs) can be integrated into the company\u2019s reporting framework to track progress and benefits further reinforces the argument\u200b\u200b\u200b\u200b.\n\nCollaborative goal-setting can ensure the client\u2019s buy-in and a sense of ownership. Proposing a collaborative approach to set sustainability goals that align with the company\u2019s strategic objectives can foster a cooperative relationship. Suggesting pilot projects to test the feasibility and benefits of sustainable practices can provide tangible results and build confidence in broader implementation\u200b\u200b.\n\nApproaching the topic of sustainability with a conservative or capitalist client requires a focus on financial benefits, risk management, and strategic advantage. By framing sustainability as a pathway to cost savings, market differentiation, regulatory compliance, and long-term viability, these practices can align with the client's self-interest and business goals. Engaging in a data-driven, collaborative dialogue will further reinforce the practical and profitable aspects of adopting sustainable practices\u200b\u200b\u200b\u200b.\n\n**References:**\n\n* Anderson, R. (2009). The Business Logic of Sustainability.\n* McDonough, W. (2002). Cradle to Cradle: Remaking the Way We Make Things.\n* Mang, P., & Haggard, B. (2016). Regenerative Development and Design: A Framework for Evolving Sustainability.", "request_id": "88c48e9f7ec8bb13-MXP", "message_source": null, "timestamp_": "absolute", "message_type": null}, "recipient": "all", "channel": null}, "parent": "d6dcd0ab-610a-42e7-ba8e-01beaa99bd88", "children": ["b32e3e0e-52be-4f2b-bd28-eb7e8dc8f940"]}, "b32e3e0e-52be-4f2b-bd28-eb7e8dc8f940": {"id": "b32e3e0e-52be-4f2b-bd28-eb7e8dc8f940", "message": {"id": "b32e3e0e-52be-4f2b-bd28-eb7e8dc8f940", "author": {"role": "system", "name": null, "metadata": {}}, "create_time": 1717133271.736717, "update_time": null, "content": {"content_type": "text", "parts": [""]}, "status": "finished_successfully", "end_turn": null, "weight": 1.0, "metadata": {"request_id": "88c48e9f7ec8bb13-MXP",

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management\u301028\u2020source\u3011\u301030\u2020source\u3011.\n\nTo frame the conversation effectively, it is crucial to adopt a data-driven approach. Presenting evidence through case studies and data demonstrating the financial benefits of sustainability can be compelling. For instance, showcasing how a competitor reduced costs and increased profits through sustainable practices can illustrate the practical benefits. Discussing how sustainability metrics and key performance indicators (KPIs) can be integrated into the company\u2019s reporting framework to track progress and benefits further reinforces the argument\u301028\u2020source\u3011.\n\nCollaborative goal-setting can ensure the client\u2019s buy-in and a sense of ownership. Proposing a collaborative approach to set sustainability goals that align with the company\u2019s strategic objectives can foster a cooperative relationship. Suggesting pilot projects to test the feasibility and benefits of sustainable practices can provide tangible results and build confidence in broader implementation\u301030\u2020source\u3011.\n\nApproaching the topic of sustainability with a conservative or capitalist client requires a focus on financial benefits, risk management, and strategic advantage. By framing sustainability as a pathway to cost savings, market differentiation, regulatory compliance, and long-term viability, these practices can align with the client's self-interest and business goals. Engaging in a data-driven, collaborative dialogue will further reinforce the practical and profitable aspects of adopting sustainable practices\u301028\u2020source\u3011\u301029\u2020source\u3011\u301030\u2020source\u3011.\n\n**References:**\n- Anderson, R. (2009). The Business Logic of Sustainability\u301028\u2020source\u3011.\n- McDonough, W. (2002). Cradle to Cradle: Remaking the Way We Make Things\u301029\u2020source\u3011.\n- Mang, P., & Haggard, B. (2016). Regenerative Development and Design: A Framework for Evolving Sustainability\u301030\u2020source\u3011."]}, "status": "finished_successfully","end_turn": true
, "weight": 1.0, "metadata": {"citations": [{"start_ix": 1077, "end_ix": 1088, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "tactiq-free-transcript-IoRjz8iTVoo.txt", "id": "file-O15fyq55A9kPiWRmfng811x4", "source": "my_files", "text": "# tactiq.io free youtube transcript\n# Cradle to cradle design | William McDonough\n# https://www.youtube.com/watch/IoRjz8iTVoo\n\n00:00:26.000 In 1962, with Rachel Carson's "Silent Spring,"\n00:00:30.000 I think for people like me in the world of the making of things,\n00:00:35.000 the canary in the mine wasn't singing.\n00:00:39.000 And so the question that we might not have birds\n00:00:42.000 became kind of fundamental to those of us wandering around\n00:00:45.000 looking for the meadowlarks that seemed to have all disappeared.\n00:00:48.000 And the question was, were the birds singing?\n00:00:51.000 Now, I'm not a scientist, that'll be really clear.\n00:00:55.000 But, you know, we've just come from this discussion of what a bird might be.\n00:00:59.000 What is a bird?\n00:01:00.000 Well, in my world, this is a rubber duck.\n00:01:04.000 It comes in California with a warning --\n00:01:06.000 "This product contains chemicals known by the State of California\n00:01:09.000 to cause cancer and birth defects or other reproductive harm."\n00:01:16.000 This is a bird.\n00:01:19.000 What kind of culture would produce a product of this kind\n00:01:22.000 and then label it and sell it to children?\n00:01:27.000 I think we have a design problem.\n00:01:30.000 Someone heard the six hours of talk that I gave\n00:01:35.000 called "The Monticello Dialogues" on NPR, and sent me this as a thank you note --\n00:01:41.000 "We realize that design is a signal of

intention,\n00:01:43.000 but it also has to occur within a world,\n00:01:46.000 and we have to understand that world in order to\n00:01:50.000 imbue our designs with inherent intelligence,\n00:01:53.000 and so as we look back at the basic state of affairs\n00:01:58.000 in which we design, we, in a way, need to go to the primordial condition\n00:02:03.000 to understand the operating system and the frame conditions of a planet,\n00:02:08.000 and I think the exciting part of that is the good news that's there,\n00:02:13.000 because the news is the news of abundance,\n00:02:16.000 and not the news of limits,\n00:02:18.000 and I think as our culture tortures itself now\n00:02:23.000 with tyrannies and concerns over limits and fear,\n00:02:28.000 we can add this other dimension of abundance that is coherent,\n00:02:33.000 driven by the sun, and start to imagine\n00:02:35.000 what that would be like to share."\n00:02:42.000 That was a nice thing to get.\n00:02:44.000 That was one sentence.\n00:02:48.000 Henry James would be proud.\n00:02:50.000 This is -- I put it down at the bottom,\n00:02:52.000 but that was extemporaneous, obviously.\n00:02:55.000 The fundamental issue is that, for me,\n00:02:58.000 design is the first signal of human intentions.\n00:03:00.000 So what are our intentions, and what would our intentions be --\n00:03:04.000 if we wake up in the morning, we have designs on the world --\n00:03:07.000 well, what would our intention be as a species\n00:03:09.000 now that we're the dominant species?\n00:03:11.000 And it's not just stewardship and dominion debate,\n00:03:14.000 because really, dominion is implicit in stewardship --\n00:03:20.000 because how could you dominate something you had killed?\n00:03:22.000 And stewardship's implicit in dominion,\n00:03:24.000 because you can't be steward of something if you can't dominate it.\n00:03:26.000 So the question is, what is the first question for designers?\n00:03:32.000 Now, as guardians -- let's say the state, for example,\n00:03:35.000 which reserves the right to kill, the right to be duplicitous and so on --\n00:03:40.000 the question we're asking the guardian at this point is\n00:03:43.000 are we meant, how are we meant,\n00:03:45.000 to secure local societies, create world peace\n00:03:47.000 and save the environment?\n00:03:49.000 But I don't know that that's the common debate.\n00:03:52.000 Commerce, on the other hand, is relatively quick,\n00:03:56.000 essentially creative, highly effective and efficient,\n00:03:58.000 and fundamentally honest, because we can't exchange\n00:04:01.000 value for very long if we don't trust each other.\n00:04:05.000 So we use the tools of commerce primarily for our work,\n00:04:07.000 but the question we bring to it is,\n00:04:09.000 how do we love all the children of all species for all time?\n00:04:13.000 And so we start our designs with that question.\n00:04:16.000 Because what we realize today is that modern culture\n00:04:18.000 appears to have adopted a strategy of tragedy.\n00:04:21.000 If we come here and say, "Well, I didn't intend\n00:04:23.000 to cause global warming on the way here,"\n00:04:24.000 and we say, "That's not part of my plan,"\n00:04:26.000 then we realize it's part of our de facto plan.\n00:04:29.000 Because it's the thing that's happening because we have no other plan.\n00:04:32.000 And I was at the White House for President Bush,\n00:04:34.000 meeting with every federal department and agency,\n00:04:36.000 and I pointed out that they appear to have no plan.\n00:04:40.000 If the end game is global warming, they're doing great.\n00:04:42.000 If the end game is mercury toxification of our children\n00:04:45.000 downwind of coal fire plants as they scuttled the Clean Air Act,\n00:04:48.000 then I see that our education programs should be explicitly defined

as,\n00:04:52.000 "Brain death for all children. No child left behind."\n00:04:54.000 (Applause)\n00:04:58.000 So, the question is, how many federal officials\n00:05:02.000 are ready to move to Ohio and Pennsylvania with their families?\n00:05:05.000 So if you don't have an endgame of something delightful,\n00:05:09.000 then you're just moving chess pieces around,\n00:05:11.000 if you don't know you're taking the king.\n00:05:12.000 So perhaps we could develop a strategy of change,\n00:05:15.000 which requires humility. And in my business as an architect,\n00:05:18.000 it's unfortunate the word "humility" and the word "architect"\n00:05:22.000 have not appeared in the same paragraph since "The Fountainhead."\n00:05:25.000 So if anybody here has trouble with the concept of design humility,\n00:05:30.000 reflect on this -- it took us 5,000 years\n00:05:33.000 to put wheels on our luggage.\n00:05:37.000 So, as Kevin Kelly pointed out, there is no endgame.\n00:05:42.000 There is an infinite game, and we're playing in that infinite game.\n00:05:46.000 And so we call it "cradle to cradle,"\n00:05:48.000 and our goal is very simple.\n00:05:49.000 This is what I presented to the White House.\n00:05:51.000 Our goal is a delightfully diverse, safe, healthy and just world,\n00:05:54.000 with clean air, clean water, soil and power --\n00:05:57.000 economically, equitably, ecologically and elegantly enjoyed, period.\n00:06:01.000 (Applause)\n00:06:04.000 What don't you like about this?\n00:06:07.000 Which part of this don't you like?\n00:06:09.000 So we realized we want full diversity,\n00:06:11.000 even though it can be difficult to remember what De Gaulle said\n00:06:14.000 when asked what it was like to be President of France.\n00:06:16.000 He said, "What do you think it's like trying to run a country with 400 kinds of cheese?"\n00:06:20.000 But at the same time, we realize that our products are not safe and healthy.\n00:06:23.000 So we've designed products\n00:06:25.000 and we analyzed chemicals down to the parts per million.\n00:06:27.000 This is a baby blanket by Pendleton that will give your child nutrition\n00:06:30.000 instead of Alzheimer's later in life.\n00:06:32.000 We can ask ourselves, what is justice,\n00:06:34.000 and is justice blind, or is justice blindness?\n00:06:38.000 And at what point did that uniform turn from white to black?\n00:06:43.000 Water has been declared a human right by the United Nations.\n00:06:46.000 Air quality is an obvious thing to anyone who breathes.\n00:06:48.000 Is there anybody here who doesn't breathe?\n00:06:51.000 Clean soil is a critical problem -- the nitrification, the dead zones\n00:06:54.000 in the Gulf of Mexico.\n00:06:56.000 A fundamental issue that's not being addressed.\n00:06:58.000 We've seen the first form of solar energy\n00:07:00.000 that's beat the hegemony of fossil fuels in the form of wind\n00:07:03.000 here in the Great Plains, and so that hegemony is leaving.\n00:07:06.000 And if we remember Sheikh Yamani when he formed OPEC,\n00:07:09.000 they asked him, "When will we see the end of the age of oil?"\n00:07:12.000 I don't know if you remember his answer, but it was,\n00:07:15.000 "The Stone Age didn't end because we ran out of stones."\n00:07:19.000 We see that companies acting ethically in this world\n00:07:23.000 are outperforming those that don't.\n00:07:24.000 We see the flows of materials in a rather terrifying prospect.\n00:07:29.000 This is a hospital monitor from Los Angeles, sent to China.\n00:07:32.000 This woman will expose herself to toxic phosphorous,\n00:07:35.000 release four pounds of toxic lead into her childrens' environment,\n00:07:38.000 which is from copper.\n00:07:40.000 On the other hand, we see great signs of hope.\n00:07:42.000 Here's Dr. Venkataswamy in

India, who's figured out\n00:07:45.000 how to do mass-produced health.\n00:07:47.000 He has given eyesight to two million people for free.\n00:07:51.000 We see in our material flows that car steels don't become car steel again\n00:07:54.000 because of the contaminants of the coatings --\n00:07:56.000 bismuth, antimony, copper and so on.\n00:07:58.000 They become building steel.\n00:07:59.000 On the other hand, we're working with Berkshire Hathaway,\n00:08:01.000 Warren Buffett and Shaw Carpet,\n00:08:04.000 the largest carpet company in the world.\n00:08:05.000 We've developed a carpet that is continuously recyclable,\n00:08:08.000 down to the parts per million.\n00:08:11.000 The upper is Nylon 6 that can go back to caprolactam,\n00:08:14.000 the bottom, a polyolephine -- infinitely recyclable thermoplastic.\n00:08:17.000 Now if I was a bird, the building on my left is a liability.\n00:08:21.000 The building on my right, which is our corporate campus for The Gap\n00:08:24.000 with an ancient meadow, is an asset -- its nesting grounds.\n00:08:29.000 Here's where I come from. I grew up in Hong Kong,\n00:08:31.000 with six million people in 40 square miles.\n00:08:33.000 During the dry season, we had four hours of water every fourth day.\n00:08:37.000 And the relationship to landscape was that of farmers who have been\n00:08:40.000 farming the same piece of ground for 40 centuries.\n00:08:44.000 You can't farm the same piece of ground for 40 centuries\n00:08:46.000 without understanding nutrient flow.\n00:08:49.000 My childhood summers were in the Puget Sound of Washington,\n00:08:52.000 among the first growth and big growth.\n00:08:54.000 My grandfather had been a lumberjack in the Olympics,\n00:08:56.000 so I have a lot of tree karma I am working off.\n00:09:01.000 I went to Yale for graduate school,\n00:09:03.000 studied in a building of this style by Le Corbusier,\n00:09:05.000 affectionately known in our business as Brutalism.\n00:09:09.000 If we look at the world of architecture,\n00:09:12.000 we see with Mies' 1928 tower for Berlin,\n00:09:15.000 the question might be, "Well, where's the sun?"\n00:09:17.000 And this might have worked in Berlin, but we built it in Houston,\n00:09:20.000 and the windows are all closed. And with most products\n00:09:23.000 appearing not to have been designed for indoor use,\n00:09:25.000 this is actually a vertical gas chamber.\n00:09:28.000 When I went to Yale, we had the first energy crisis,\n00:09:31.000 and I was designing the first solar-heated house in Ireland\n00:09:33.000 as a student, which I then built --\n00:09:35.000 which would give you a sense of my ambition.\n00:09:37.000 And Richard Meier, who was one of my teachers,\n00:09:39.000 kept coming over to my desk to give me criticism,\n00:09:41.000 and he would say, "Bill, you've got to understand- --\n00:09:43.000 solar energy has nothing to do with architecture."\n00:09:51.000 I guess he didn't read Vitruvius.\n00:09:53.000 In 1984, we did the first so-called "green office" in America\n00:09:57.000 for Environmental Defense.\n00:09:58.000 We started asking manufacturers what were in their materials.\n00:10:01.000 They said, "They're proprietary, they're legal, go away."\n00:10:03.000 The only indoor quality work done in this country at that time\n00:10:05.000 was sponsored by R.J. Reynolds Tobacco Company,\n00:10:08.000 and it was to prove there was no danger\n00:10:09.000 from secondhand smoke in the workplace.\n00:10:12.000 So, all of a sudden, here I am, graduating from high school in 1969,\n00:10:16.000 and this happens, and we realize that "away" went away.\n00:10:19.000 Remember we used to throw things away, and we'd point to away?\n00:10:23.000 And yet, NOAA has now shown us, for example --\n00:10:25.000 you see that little blue thing above Hawaii?\n00:10:27.000

That's the Pacific Gyre.\n00:10:28.000 It was recently dragged for plankton by scientists,\n00:10:30.000 and they found six times as much plastic as plankton.\n00:10:34.000 When asked, they said, "It's kind of like a giant toilet that doesn't flush."\n00:10:39.000 Perhaps that's away.\n00:10:40.000 So we're looking for the design rules of this --\n00:10:42.000 this is the highest biodiversity of trees in the world, Irian Jaya,\n00:10:44.000 259 species of tree, and we described this\n00:10:48.000 in the book, "Cradle to Cradle."\n00:10:49.000 The book itself is a polymer. It is not a tree.\n00:10:53.000 That's the name of the first chapter -- "This Book is Not a Tree."\n00:10:56.000 Because in poetics, as Margaret Atwood pointed out,\n00:10:59.000 "we write our history on the skin of fish\n00:11:01.000 with the blood of bears."\n00:11:04.000 And with so much polymer, what we really need\n00:11:05.000 is technical nutrition, and to use something\n00:11:08.000 as elegant as a tree -- imagine this design assignment:\n00:11:11.000 Design something that makes oxygen, sequesters carbon,\n00:11:13.000 fixes nitrogen, distills water, accrues solar energy as fuel,\n00:11:17.000 makes complex sugars and food, creates microclimates,\n00:11:21.000 changes colors with the seasons and self-replicates.\n00:11:27.000 Well, why don't we knock that down and write on it?\n00:11:29.000 (Laughter)\n00:11:35.000 So, we're looking at the same criteria\n00:11:37.000 as most people -- you know, can I afford it?\n00:11:39.000 Does it work? Do I like it?\n00:11:41.000 We're adding the Jeffersonian agenda, and I come from Charlottesville,\n00:11:43.000 where I've had the privilege of living in a house designed by Thomas Jefferson.\n00:11:47.000 We're adding life, liberty and the pursuit of happiness.\n00:11:53.000 Now if we look at the word "competition,"\n00:11:54.000 I'm sure most of you've used it.\n00:11:56.000 You know, most people don't realize it comes from\n00:11:57.000 the Latin competere, which means strive together.\n00:12:00.000 It means the way Olympic athletes train with each other.\n00:12:03.000 They get fit together, and then they compete.\n00:12:06.000 The Williams sisters compete -- one wins Wimbledon.\n00:12:08.000 So we've been looking at the idea of competition\n00:12:11.000 as a way of cooperating in order to get fit together.\n00:12:15.000 And the Chinese government has now --\n00:12:16.000 I work with the Chinese government now --\n00:12:18.000 has taken this up.\n00:12:20.000 We're also looking at survival of the fittest,\n00:12:22.000 not in just competition terms in our modern context\n00:12:24.000 of destroy the other or beat them to the ground,\n00:12:27.000 but really to fit together and build niches\n00:12:29.000 and have growth that is good.\n00:12:31.000 Now most environmentalists don't say growth is good,\n00:12:33.000 because, in our lexicon, asphalt is two words: assigning blame.\n00:12:38.000 But if we look at asphalt as our growth,\n00:12:41.000 then we realize that all we're doing is destroying\n00:12:43.000 the planetary's fundamental underlying operating system.\n00:12:47.000 So when we see E equals mc squared come along, from a poet's perspective,\n00:12:52.000 we see energy as physics, chemistry as mass,\n00:12:54.000 and all of a sudden, you get this biology.\n00:12:56.000 And we have plenty of energy, so we'll solve that problem,\n00:12:59.000 but the biology problem's tricky, because as we put through\n00:13:02.000 all these toxic materials that we disgorge,\n00:13:05.000 we will never be able to recover that.\n00:13:07.000 And as Francis Crick pointed out, nine years\n00:13:09.000 after discovering DNA with Mr. Watson,\n00:13:12.000 that life itself has to have growth as

a precondition --\n00:13:16.000 it has to have free energy, sunlight\n00:13:18.000 and it needs to be an open system of chemicals.\n00:13:21.000 So we're asking for human artifice to become a living thing,\n00:13:24.000 and we want growth, we want free energy from sunlight\n00:13:26.000 and we want an open metabolism for chemicals.\n00:13:29.000 Then, the question becomes not growth or no growth,\n00:13:31.000 but what do you want to grow?\n00:13:34.000 So instead of just growing destruction,\n00:13:36.000 we want to grow the things that we might enjoy,\n00:13:38.000 and someday the FDA will allow us to make French cheese.\n00:13:41.000 So therefore, we have these two metabolisms,\n00:13:45.000 and I worked with a German chemist, Michael Braungart,\n00:13:47.000 and we've identified the two fundamental metabolisms.\n00:13:49.000 The biological one I'm sure you understand,\n00:13:51.000 but also the technical one, where we take materials\n00:13:53.000 and put them into closed cycles.\n00:13:55.000 We call them biological nutrition and technical nutrition.\n00:13:58.000 Technical nutrition will be in an order of magnitude of biological nutrition.\n00:14:02.000 Biological nutrition can supply about 500 million humans,\n00:14:05.000 which means that if we all wore Birkenstocks and cotton,\n00:14:07.000 the world would run out of cork and dry up.\n00:14:10.000 So we need materials in closed cycles,\n00:14:12.000 but we need to analyze them down to the parts per million\n00:14:14.000 for cancer, birth defects, mutagenic effects,\n00:14:17.000 disruption of our immune systems, biodegradation, persistence,\n00:14:20.000 heavy metal content, knowledge of how we're making them\n00:14:23.000 and their production and so on.\n00:14:25.000 Our first product was a textile where we analyzed 8,000 chemicals\n00:14:29.000 in the textile industry.\n00:14:30.000 Using those intellectual filters, we eliminated [7,962.]\n00:14:35.000 We were left with 38 chemicals.\n00:14:37.000 We have since databased the 4000 most commonly used chemicals\n00:14:40.000 in human manufacturing, and we're releasing this database into the public in six weeks.\n00:14:45.000 So designers all over the world can analyze their products\n00:14:47.000 down to the parts per million for human and ecological health.\n00:14:52.000 (Applause)\n00:14:57.000 We've developed a protocol so that companies can send\n00:15:00.000 these same messages all the way through their supply chains,\n00:15:03.000 because when we asked most companies we work with -- about a trillion dollars\n00:15:06.000 -- and say, "Where does your stuff come from?" They say, "Suppliers."\n00:15:08.000 "And where does it go?"\n00:15:10.000 "Customers."\n00:15:11.000 So we need some help there.\n00:15:12.000 So the biological nutrients, the first fabrics --\n00:15:14.000 the water coming out was clean enough to drink.\n00:15:16.000 Technical nutrients -- this is for Shaw Carpet, infinitely reusable carpet.\n00:15:20.000 Here's nylon going back to caprolactam back to carpet.\n00:15:23.000 Biotechnical nutrients -- the Model U for Ford Motor,\n00:15:26.000 a cradle to cradle car -- concept car.\n00:15:28.000 Shoes for Nike, where the uppers are polyesters, infinitely recyclable,\n00:15:32.000 the bottoms are biodegradable soles.\n00:15:35.000 Wear your old shoes in, your new shoes out.\n00:15:37.000 There is no finish line.\n00:15:39.000 The idea here of the car is that some of the materials\n00:15:41.000 go back to the industry forever, some of the materials go back to soil --\n00:15:44.000 it's all solar-powered.\n00:15:46.000 Here's a building at Oberlin College we designed\n00:15:48.000 that makes more energy than it needs to operate and purifies its own water.\n00:15:52.000 Here's a building for The Gap, where the ancient grasses\n00:15:54.000 of San Bruno, California, are on the roof.\n00:15:58.000 And

this is our project for Ford Motor Company.\n00:16:00.000 It's the revitalization of the River Rouge in Dearborn.\n00:16:02.000 This is obviously a color photograph.\n00:16:06.000 These are our tools. These are how we sold it to Ford.\n00:16:10.000 We saved Ford 35 million dollars doing it this way, day one,\n00:16:13.000 which is the equivalent of the Ford Taurus\n00:16:15.000 at a four percent margin of an order for 900 million dollars worth of cars.\n00:16:19.000 Here it is. It's the world's largest green roof, 10 and a half acres.\n00:16:22.000 This is the roof, saving money,\n00:16:25.000 and this is the first species to arrive here. These are killdeer.\n00:16:29.000 They showed up in five days.\n00:16:32.000 And we now have 350-pound auto workers\n00:16:34.000 learning bird songs on the Internet.\n00:16:38.000 We're developing now protocols for cities --\n00:16:40.000 that's the home of technical nutrients.\n00:16:42.000 The country -- the home of biological. And putting them together.\n00:16:45.000 And so I will finish by showing you a new city\n00:16:47.000 we're designing for the Chinese government.\n00:16:49.000 We're doing 12 cities for China right now,\n00:16:52.000 based on cradle to cradle as templates.\n00:16:54.000 Our assignment is to develop protocols for the housing\n00:16:57.000 for 400 million people in 12 years.\n00:16:59.000 We did a mass energy balance -- if they use brick,\n00:17:01.000 they will lose all their soil and burn all their coal.\n00:17:04.000 They'll have cities with no energy and no food.\n00:17:06.000 We signed a Memorandum of Understanding --\n00:17:08.000 here's Madam Deng Nan, Deng Xiaoping's daughter --\n00:17:10.000 for China to adopt cradle to cradle.\n00:17:12.000 Because if they toxify themselves, being the lowest-cost producer,\n00:17:16.000 send it to the lowest-cost distribution -- Wal-Mart --\n00:17:18.000 and then we send them all our money, what we'll discover is that\n00:17:21.000 we have what, effectively, when I was a student,\n00:17:24.000 was called mutually assured destruction.\n00:17:27.000 Now we do it by molecule. These are our cities.\n00:17:30.000 We're building a new city next to this city; look at that landscape.\n00:17:33.000 This is the site.\n00:17:35.000 We don't normally do green fields, but this one is about to be built,\n00:17:39.000 so they brought us in to intercede.\n00:17:41.000 This is their plan.\n00:17:43.000 It's a rubber stamp grid that they laid right on that landscape.\n00:17:46.000 And they brought us in and said, "What would you do?"\n00:17:49.000 This is what they would end up with, which is another color photograph.\n00:17:53.000 So this is the existing site, so this is what it looks like now,\n00:17:56.000 and here's our proposal.\n00:17:58.000 (Applause)\n00:18:02.000 So the way we approached this\n00:18:04.000 is we studied the hydrology very carefully.\n00:18:06.000 We studied the biota, the ancient biota,\n00:18:08.000 the current farming and the protocols.\n00:18:10.000 We studied the winds and the sun to make sure everybody in the city\n00:18:12.000 will have fresh air, fresh water and direct sunlight\n00:18:18.000 in every single apartment at some point during the day.\n00:18:21.000 We then take the parks and lay them out as ecological infrastructure.\n00:18:25.000 We lay out the building areas.\n00:18:28.000 We start to integrate commercial and mixed use\n00:18:29.000 so the people all have centers and places to be.\n00:18:32.000 The transportation is all very simple,\n00:18:34.000 everybody's within a five-minute walk of mobility.\n00:18:37.000 We have a 24-hour street, so that there's always a place that's alive.\n00:18:42.000 The waste systems all connect.\n00:18:44.000 If you flush a toilet, your feces will go to the sewage treatment plants,\n00:18:49.000 which are sold as assets, not

liabilities.\n00:18:51.000 Because who wants the fertilizer factory that makes natural gas?\n00:18:55.000 The waters are all taken in to construct the wetlands for habitat restorations.\n00:19:00.000 And then it makes natural gas, which then goes back into the city\n00:19:04.000 to power the fuel for the cooking for the city.\n00:19:08.000 So this is -- these are fertilizer gas plants.\n00:19:10.000 And then the compost is all taken back\n00:19:13.000 to the roofs of the city, where we've got farming,\n00:19:15.000 because what we've done is lifted up the city,\n00:19:19.000 the landscape, into the air to -- to restore the native landscape\n00:19:26.000 on the roofs of the buildings.\n00:19:28.000 The solar power of all the factory centers\n00:19:31.000 and all the industrial zones with their light roofs powers the city.\n00:19:34.000 And this is the concept for the top of the city.\n00:19:36.000 We've lifted the earth up onto the roofs.\n00:19:40.000 The farmers have little bridges to get from one roof to the next.\n00:19:44.000 We inhabit the city with work/live space on all the ground floors.\n00:19:48.000 And so this is the existing city, and this is the new city.\n00:19:53.000 (Applause)\n", "extra": {"cited_message_idx": 29, "search_result_idx": null, "evidence_text": "source"}, "url": "file-O15fyq55A9kPiWRmfng811x4"}}, {"start_ix": 1449, "end_ix": 1460, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "tactiq-free-transcript-IoRjz8iTVoo.txt", "id": "file-O15fyq55A9kPiWRmfng811x4", "source": "my_files", "text": "# tactiq.io free youtube transcript\n# Cradle to cradle design | William McDonough\n# https://www.youtube.com/watch/IoRjz8iTVoo\n\n00:00:26.000 In 1962, with Rachel Carson's "Silent Spring,"\n00:00:30.000 I think for people like me in the world of the making of things,\n00:00:35.000 the canary in the mine wasn't singing.\n00:00:39.000 And so the question that we might not have birds\n00:00:42.000 became kind of fundamental to those of us wandering around\n00:00:45.000 looking for the meadowlarks that seemed to have all disappeared.\n00:00:48.000 And the question was, were the birds singing?\n00:00:51.000 Now, I'm not a scientist, that'll be really clear.\n00:00:55.000 But, you know, we've just come from this discussion of what a bird might be.\n00:00:59.000 What is a bird?\n00:01:00.000 Well, in my world, this is a rubber duck.\n00:01:04.000 It comes in California with a warning --\n00:01:06.000 "This product contains chemicals known by the State of California\n00:01:09.000 to cause cancer and birth defects or other reproductive harm."\n00:01:16.000 This is a bird.\n00:01:19.000 What kind of culture would produce a product of this kind\n00:01:22.000 and then label it and sell it to children?\n00:01:27.000 I think we have a design problem.\n00:01:30.000 Someone heard the six hours of talk that I gave\n00:01:35.000 called "The Monticello Dialogues" on NPR, and sent me this as a thank you note --\n00:01:41.000 "We realize that design is a signal of intention,\n00:01:43.000 but it also has to occur within a world,\n00:01:46.000 and we have to understand that world in order to\n00:01:50.000 imbue our designs with inherent intelligence,\n00:01:53.000 and so as we look back at the basic state of affairs\n00:01:58.000 in which we design, we, in a way, need to go to the primordial condition\n00:02:03.000 to understand the operating system and the frame conditions of a planet,\n00:02:08.000 and I think the exciting part of that is the good news that's there,\n00:02:13.000 because the news is the news of abundance,\n00:02:16.000 and not the news of limits,\n00:02:18.000 and I think as our culture tortures itself now\n00:02:23.000 with tyrannies and concerns over limits and fear,\n00:02:28.000 we can add this other dimension of abundance that is coherent,\n00:02:33.000 driven by the sun, and start to imagine\n00:02:35.000 what

that would be like to share."\n00:02:42.000 That was a nice thing to get.\n00:02:44.000 That was one sentence.\n00:02:48.000 Henry James would be proud.\n00:02:50.000 This is -- I put it down at the bottom,\n00:02:52.000 but that was extemporaneous, obviously.\n00:02:55.000 The fundamental issue is that, for me,\n00:02:58.000 design is the first signal of human intentions.\n00:03:00.000 So what are our intentions, and what would our intentions be --\n00:03:04.000 if we wake up in the morning, we have designs on the world --\n00:03:07.000 well, what would our intention be as a species\n00:03:09.000 now that we're the dominant species?\n00:03:11.000 And it's not just stewardship and dominion debate,\n00:03:14.000 because really, dominion is implicit in stewardship --\n00:03:20.000 because how could you dominate something you had killed?\n00:03:22.000 And stewardship's implicit in dominion,\n00:03:24.000 because you can't be steward of something if you can't dominate it.\n00:03:26.000 So the question is, what is the first question for designers?\n00:03:32.000 Now, as guardians -- let's say the state, for example,\n00:03:35.000 which reserves the right to kill, the right to be duplicitous and so on --\n00:03:40.000 the question we're asking the guardian at this point is\n00:03:43.000 are we meant, how are we meant,\n00:03:45.000 to secure local societies, create world peace\n00:03:47.000 and save the environment?\n00:03:49.000 But I don't know that that's the common debate.\n00:03:52.000 Commerce, on the other hand, is relatively quick,\n00:03:56.000 essentially creative, highly effective and efficient,\n00:03:58.000 and fundamentally honest, because we can't exchange\n00:04:01.000 value for very long if we don't trust each other.\n00:04:05.000 So we use the tools of commerce primarily for our work,\n00:04:07.000 but the question we bring to it is,\n00:04:09.000 how do we love all the children of all species for all time?\n00:04:13.000 And so we start our designs with that question.\n00:04:16.000 Because what we realize today is that modern culture\n00:04:18.000 appears to have adopted a strategy of tragedy.\n00:04:21.000 If we come here and say, "Well, I didn't intend\n00:04:23.000 to cause global warming on the way here,"\n00:04:24.000 and we say, "That's not part of my plan,"\n00:04:26.000 then we realize it's part of our de facto plan.\n00:04:29.000 Because it's the thing that's happening because we have no other plan.\n00:04:32.000 And I was at the White House for President Bush,\n00:04:34.000 meeting with every federal department and agency,\n00:04:36.000 and I pointed out that they appear to have no plan.\n00:04:40.000 If the end game is global warming, they're doing great.\n00:04:42.000 If the end game is mercury toxification of our children\n00:04:45.000 downwind of coal fire plants as they scuttled the Clean Air Act,\n00:04:48.000 then I see that our education programs should be explicitly defined as,\n00:04:52.000 "Brain death for all children. No child left behind."\n00:04:54.000 (Applause)\n00:04:58.000 So, the question is, how many federal officials\n00:05:02.000 are ready to move to Ohio and Pennsylvania with their families?\n00:05:05.000 So if you don't have an endgame of something delightful,\n00:05:09.000 then you're just moving chess pieces around,\n00:05:11.000 if you don't know you're taking the king.\n00:05:12.000 So perhaps we could develop a strategy of change,\n00:05:15.000 which requires humility. And in my business as an architect,\n00:05:18.000 it's unfortunate the word "humility" and the word "architect"\n00:05:22.000 have not appeared in the same paragraph since "The Fountainhead."\n00:05:25.000 So if anybody here has trouble with the

concept of design humility,\n00:05:30.000 reflect on this -- it took us 5,000 years\n00:05:33.000 to put wheels on our luggage.\n00:05:37.000 So, as Kevin Kelly pointed out, there is no endgame.\n00:05:42.000 There is an infinite game, and we're playing in that infinite game.\n00:05:46.000 And so we call it "cradle to cradle,"\n00:05:48.000 and our goal is very simple.\n00:05:49.000 This is what I presented to the White House.\n00:05:51.000 Our goal is a delightfully diverse, safe, healthy and just world,\n00:05:54.000 with clean air, clean water, soil and power --\n00:05:57.000 economically, equitably, ecologically and elegantly enjoyed, period.\n00:06:01.000 (Applause)\n00:06:04.000 What don't you like about this?\n00:06:07.000 Which part of this don't you like?\n00:06:09.000 So we realized we want full diversity,\n00:06:11.000 even though it can be difficult to remember what De Gaulle said\n00:06:14.000 when asked what it was like to be President of France.\n00:06:16.000 He said, "What do you think it's like trying to run a country with 400 kinds of cheese?"\n00:06:20.000 But at the same time, we realize that our products are not safe and healthy.\n00:06:23.000 So we've designed products\n00:06:25.000 and we analyzed chemicals down to the parts per million.\n00:06:27.000 This is a baby blanket by Pendleton that will give your child nutrition\n00:06:30.000 instead of Alzheimer's later in life.\n00:06:32.000 We can ask ourselves, what is justice,\n00:06:34.000 and is justice blind, or is justice blindness?\n00:06:38.000 And at what point did that uniform turn from white to black?\n00:06:43.000 Water has been declared a human right by the United Nations.\n00:06:46.000 Air quality is an obvious thing to anyone who breathes.\n00:06:48.000 Is there anybody here who doesn't breathe?\n00:06:51.000 Clean soil is a critical problem -- the nitrification, the dead zones\n00:06:54.000 in the Gulf of Mexico.\n00:06:56.000 A fundamental issue that's not being addressed.\n00:06:58.000 We've seen the first form of solar energy\n00:07:00.000 that's beat the hegemony of fossil fuels in the form of wind\n00:07:03.000 here in the Great Plains, and so that hegemony is leaving.\n00:07:06.000 And if we remember Sheikh Yamani when he formed OPEC,\n00:07:09.000 they asked him, "When will we see the end of the age of oil?"\n00:07:12.000 I don't know if you remember his answer, but it was,\n00:07:15.000 "The Stone Age didn't end because we ran out of stones."\n00:07:19.000 We see that companies acting ethically in this world\n00:07:23.000 are outperforming those that don't.\n00:07:24.000 We see the flows of materials in a rather terrifying prospect.\n00:07:29.000 This is a hospital monitor from Los Angeles, sent to China.\n00:07:32.000 This woman will expose herself to toxic phosphorous,\n00:07:35.000 release four pounds of toxic lead into her childrens' environment,\n00:07:38.000 which is from copper.\n00:07:40.000 On the other hand, we see great signs of hope.\n00:07:42.000 Here's Dr. Venkataswamy in India, who's figured out\n00:07:45.000 how to do mass-produced health.\n00:07:47.000 He has given eyesight to two million people for free.\n00:07:51.000 We see in our material flows that car steels don't become car steel again\n00:07:54.000 because of the contaminants of the coatings --\n00:07:56.000 bismuth, antimony, copper and so on.\n00:07:58.000 They become building steel.\n00:07:59.000 On the other hand, we're working with Berkshire Hathaway,\n00:08:01.000 Warren Buffett and Shaw Carpet,\n00:08:04.000 the largest carpet company in the world.\n00:08:05.000 We've developed a carpet that is continuously recyclable,\n00:08:08.000 down to the parts per million.\n00:08:11.000 The upper is Nylon 6 that can go back to caprolactam,\n00:08:14.000 the bottom, a polyolephine -- infinitely recyclable thermoplastic.\n00:08:17.000 Now if I was a bird,

the building on my left is a liability.\n00:08:21.000 The building on my right, which is our corporate campus for The Gap\n00:08:24.000 with an ancient meadow, is an asset -- its nesting grounds.\n00:08:29.000 Here's where I come from. I grew up in Hong Kong,\n00:08:31.000 with six million people in 40 square miles.\n00:08:33.000 During the dry season, we had four hours of water every fourth day.\n00:08:37.000 And the relationship to landscape was that of farmers who have been\n00:08:40.000 farming the same piece of ground for 40 centuries.\n00:08:44.000 You can't farm the same piece of ground for 40 centuries\n00:08:46.000 without understanding nutrient flow.\n00:08:49.000 My childhood summers were in the Puget Sound of Washington,\n00:08:52.000 among the first growth and big growth.\n00:08:54.000 My grandfather had been a lumberjack in the Olympics,\n00:08:56.000 so I have a lot of tree karma I am working off.\n00:09:01.000 I went to Yale for graduate school,\n00:09:03.000 studied in a building of this style by Le Corbusier,\n00:09:05.000 affectionately known in our business as Brutalism.\n00:09:09.000 If we look at the world of architecture,\n00:09:12.000 we see with Mies' 1928 tower for Berlin,\n00:09:15.000 the question might be, "Well, where's the sun?"\n00:09:17.000 And this might have worked in Berlin, but we built it in Houston,\n00:09:20.000 and the windows are all closed. And with most products\n00:09:23.000 appearing not to have been designed for indoor use,\n00:09:25.000 this is actually a vertical gas chamber.\n00:09:28.000 When I went to Yale, we had the first energy crisis,\n00:09:31.000 and I was designing the first solar-heated house in Ireland\n00:09:33.000 as a student, which I then built -- \n00:09:35.000 which would give you a sense of my ambition.\n00:09:37.000 And Richard Meier, who was one of my teachers,\n00:09:39.000 kept coming over to my desk to give me criticism,\n00:09:41.000 and he would say, "Bill, you've got to understand- --\n00:09:43.000 solar energy has nothing to do with architecture."\n00:09:51.000 I guess he didn't read Vitruvius.\n00:09:53.000 In 1984, we did the first so-called "green office" in America\n00:09:57.000 for Environmental Defense.\n00:09:58.000 We started asking manufacturers what were in their materials.\n00:10:01.000 They said, "They're proprietary, they're legal, go away."\n00:10:03.000 The only indoor quality work done in this country at that time\n00:10:05.000 was sponsored by R.J. Reynolds Tobacco Company,\n00:10:08.000 and it was to prove there was no danger\n00:10:09.000 from secondhand smoke in the workplace.\n00:10:12.000 So, all of a sudden, here I am, graduating from high school in 1969,\n00:10:16.000 and this happens, and we realize that "away" went away.\n00:10:19.000 Remember we used to throw things away, and we'd point to away?\n00:10:23.000 And yet, NOAA has now shown us, for example --\n00:10:25.000 you see that little blue thing above Hawaii?\n00:10:27.000 That's the Pacific Gyre.\n00:10:28.000 It was recently dragged for plankton by scientists,\n00:10:30.000 and they found six times as much plastic as plankton.\n00:10:34.000 When asked, they said, "It's kind of like a giant toilet that doesn't flush."\n00:10:39.000 Perhaps that's away.\n00:10:40.000 So we're looking for the design rules of this -- \n00:10:42.000 this is the highest biodiversity of trees in the world, Irian Jaya,\n00:10:44.000 259 species of tree, and we described this\n00:10:48.000 in the book, "Cradle to Cradle."\n00:10:49.000 The book itself is a polymer. It is not a tree.\n00:10:53.000 That's the name of the first chapter -- "This Book is Not a Tree."\n00:10:56.000 Because in poetics, as Margaret Atwood pointed out,\n00:10:59.000 "we write our history on the skin of fish\n00:11:01.000 with

the blood of bears."\n00:11:04.000 And with so much polymer, what we really need\n00:11:05.000 is technical nutrition, and to use something\n00:11:08.000 as elegant as a tree -- imagine this design assignment:\n00:11:11.000 Design something that makes oxygen, sequesters carbon,\n00:11:13.000 fixes nitrogen, distills water, accrues solar energy as fuel,\n00:11:17.000 makes complex sugars and food, creates microclimates,\n00:11:21.000 changes colors with the seasons and self-replicates.\n00:11:27.000 Well, why don't we knock that down and write on it?\n00:11:29.000 (Laughter)\n00:11:35.000 So, we're looking at the same criteria\n00:11:37.000 as most people -- you know, can I afford it?\n00:11:39.000 Does it work? Do I like it?\n00:11:41.000 We're adding the Jeffersonian agenda, and I come from Charlottesville,\n00:11:43.000 where I've had the privilege of living in a house designed by Thomas Jefferson.\n00:11:47.000 We're adding life, liberty and the pursuit of happiness.\n00:11:53.000 Now if we look at the word "competition,"\n00:11:54.000 I'm sure most of you've used it.\n00:11:56.000 You know, most people don't realize it comes from\n00:11:57.000 the Latin competere, which means strive together.\n00:12:00.000 It means the way Olympic athletes train with each other.\n00:12:03.000 They get fit together, and then they compete.\n00:12:06.000 The Williams sisters compete -- one wins Wimbledon.\n00:12:08.000 So we've been looking at the idea of competition\n00:12:11.000 as a way of cooperating in order to get fit together.\n00:12:15.000 And the Chinese government has now --\n00:12:16.000 I work with the Chinese government now --\n00:12:18.000 has taken this up.\n00:12:20.000 We're also looking at survival of the fittest,\n00:12:22.000 not in just competition terms in our modern context\n00:12:24.000 of destroy the other or beat them to the ground,\n00:12:27.000 but really to fit together and build niches\n00:12:29.000 and have growth that is good.\n00:12:31.000 Now most environmentalists don't say growth is good,\n00:12:33.000 because, in our lexicon, asphalt is two words: assigning blame.\n00:12:38.000 But if we look at asphalt as our growth,\n00:12:41.000 then we realize that all we're doing is destroying\n00:12:43.000 the planetary's fundamental underlying operating system.\n00:12:47.000 So when we see E equals mc squared come along, from a poet's perspective,\n00:12:52.000 we see energy as physics, chemistry as mass,\n00:12:54.000 and all of a sudden, you get this biology.\n00:12:56.000 And we have plenty of energy, so we'll solve that problem,\n00:12:59.000 but the biology problem's tricky, because as we put through\n00:13:02.000 all these toxic materials that we disgorge,\n00:13:05.000 we will never be able to recover that.\n00:13:07.000 And as Francis Crick pointed out, nine years\n00:13:09.000 after discovering DNA with Mr. Watson,\n00:13:12.000 that life itself has to have growth as a precondition --\n00:13:16.000 it has to have free energy, sunlight\n00:13:18.000 and it needs to be an open system of chemicals.\n00:13:21.000 So we're asking for human artifice to become a living thing,\n00:13:24.000 and we want growth, we want free energy from sunlight\n00:13:26.000 and we want an open metabolism for chemicals.\n00:13:29.000 Then, the question becomes not growth or no growth,\n00:13:31.000 but what do you want to grow?\n00:13:34.000 So instead of just growing destruction,\n00:13:36.000 we want to grow the things that we might enjoy,\n00:13:38.000 and someday the FDA will allow us to make French cheese.\n00:13:41.000 So therefore, we have these two metabolisms,\n00:13:45.000 and I worked with a German chemist, Michael Braungart,\n00:13:47.000 and we've identified the two fundamental metabolisms.\n00:13:49.000 The biological one I'm

sure you understand,\n00:13:51.000 but also the technical one, where we take materials\n00:13:53.000 and put them into closed cycles.\n00:13:55.000 We call them biological nutrition and technical nutrition.\n00:13:58.000 Technical nutrition will be in an order of magnitude of biological nutrition.\n00:14:02.000 Biological nutrition can supply about 500 million humans,\n00:14:05.000 which means that if we all wore Birkenstocks and cotton,\n00:14:07.000 the world would run out of cork and dry up.\n00:14:10.000 So we need materials in closed cycles,\n00:14:12.000 but we need to analyze them down to the parts per million\n00:14:14.000 for cancer, birth defects, mutagenic effects,\n00:14:17.000 disruption of our immune systems, biodegradation, persistence,\n00:14:20.000 heavy metal content, knowledge of how we're making them\n00:14:23.000 and their production and so on.\n00:14:25.000 Our first product was a textile where we analyzed 8,000 chemicals\n00:14:29.000 in the textile industry.\n00:14:30.000 Using those intellectual filters, we eliminated [7,962.]\n00:14:35.000 We were left with 38 chemicals.\n00:14:37.000 We have since databased the 4000 most commonly used chemicals\n00:14:40.000 in human manufacturing, and we're releasing this database into the public in six weeks.\n00:14:45.000 So designers all over the world can analyze their products\n00:14:47.000 down to the parts per million for human and ecological health.\n00:14:52.000 (Applause)\n00:14:57.000 We've developed a protocol so that companies can send\n00:15:00.000 these same messages all the way through their supply chains,\n00:15:03.000 because when we asked most companies we work with -- about a trillion dollars\n00:15:06.000 -- and say, "Where does your stuff come from?" They say, "Suppliers."\n00:15:08.000 "And where does it go?"\n00:15:10.000 "Customers."\n00:15:11.000 So we need some help there.\n00:15:12.000 So the biological nutrients, the first fabrics --\n00:15:14.000 the water coming out was clean enough to drink.\n00:15:16.000 Technical nutrients -- this is for Shaw Carpet, infinitely reusable carpet.\n00:15:20.000 Here's nylon going back to caprolactam back to carpet.\n00:15:23.000 Biotechnical nutrients -- the Model U for Ford Motor,\n00:15:26.000 a cradle to cradle car -- concept car.\n00:15:28.000 Shoes for Nike, where the uppers are polyesters, infinitely recyclable,\n00:15:32.000 the bottoms are biodegradable soles.\n00:15:35.000 Wear your old shoes in, your new shoes out.\n00:15:37.000 There is no finish line.\n00:15:39.000 The idea here of the car is that some of the materials\n00:15:41.000 go back to the industry forever, some of the materials go back to soil --\n00:15:44.000 it's all solar-powered.\n00:15:46.000 Here's a building at Oberlin College we designed\n00:15:48.000 that makes more energy than it needs to operate and purifies its own water.\n00:15:52.000 Here's a building for The Gap, where the ancient grasses\n00:15:54.000 of San Bruno, California, are on the roof.\n00:15:58.000 And this is our project for Ford Motor Company.\n00:16:00.000 It's the revitalization of the River Rouge in Dearborn.\n00:16:02.000 This is obviously a color photograph.\n00:16:06.000 These are our tools. These are how we sold it to Ford.\n00:16:10.000 We saved Ford 35 million dollars doing it this way, day one,\n00:16:13.000 which is the equivalent of the Ford Taurus\n00:16:15.000 at a four percent margin of an order for 900 million dollars worth of cars.\n00:16:19.000 Here it is. It's the world's largest green roof, 10 and a half acres.\n00:16:22.000 This is the roof, saving money,\n00:16:25.000 and this is the first species to arrive here. These are killdeer.\n00:16:29.000 They showed up in five days.\n00:16:32.000 And we now have 350-pound auto workers\n00:16:34.000 learning bird songs on the Internet.\n00:16:38.000 We're developing now protocols for cities --

\n00:16:40.000 that's the home of technical nutrients.\n00:16:42.000 The country -- the home of biological. And putting them together.\n00:16:45.000 And so I will finish by showing you a new city\n00:16:47.000 we're designing for the Chinese government.\n00:16:49.000 We're doing 12 cities for China right now,\n00:16:52.000 based on cradle to cradle as templates.\n00:16:54.000 Our assignment is to develop protocols for the housing\n00:16:57.000 for 400 million people in 12 years.\n00:16:59.000 We did a mass energy balance -- if they use brick,\n00:17:01.000 they will lose all their soil and burn all their coal.\n00:17:04.000 They'll have cities with no energy and no food.\n00:17:06.000 We signed a Memorandum of Understanding --\n00:17:08.000 here's Madam Deng Nan, Deng Xiaoping's daughter --\n00:17:10.000 for China to adopt cradle to cradle.\n00:17:12.000 Because if they toxify themselves, being the lowest-cost producer,\n00:17:16.000 send it to the lowest-cost distribution -- Wal-Mart --\n00:17:18.000 and then we send them all our money, what we'll discover is that\n00:17:21.000 we have what, effectively, when I was a student,\n00:17:24.000 was called mutually assured destruction.\n00:17:27.000 Now we do it by molecule. These are our cities.\n00:17:30.000 We're building a new city next to this city; look at that landscape.\n00:17:33.000 This is the site.\n00:17:35.000 We don't normally do green fields, but this one is about to be built,\n00:17:39.000 so they brought us in to intercede.\n00:17:41.000 This is their plan.\n00:17:43.000 It's a rubber stamp grid that they laid right on that landscape.\n00:17:46.000 And they brought us in and said, "What would you do?"\n00:17:49.000 This is what they would end up with, which is another color photograph.\n00:17:53.000 So this is the existing site, so this is what it looks like now,\n00:17:56.000 and here's our proposal.\n00:17:58.000 (Applause)\n00:18:02.000 So the way we approached this\n00:18:04.000 is we studied the hydrology very carefully.\n00:18:06.000 We studied the biota, the ancient biota,\n00:18:08.000 the current farming and the protocols.\n00:18:10.000 We studied the winds and the sun to make sure everybody in the city\n00:18:12.000 will have fresh air, fresh water and direct sunlight\n00:18:18.000 in every single apartment at some point during the day.\n00:18:21.000 We then take the parks and lay them out as ecological infrastructure.\n00:18:25.000 We lay out the building areas.\n00:18:28.000 We start to integrate commercial and mixed use\n00:18:29.000 so the people all have centers and places to be.\n00:18:32.000 The transportation is all very simple,\n00:18:34.000 everybody's within a five-minute walk of mobility.\n00:18:37.000 We have a 24-hour street, so that there's always a place that's alive.\n00:18:42.000 The waste systems all connect.\n00:18:44.000 If you flush a toilet, your feces will go to the sewage treatment plants,\n00:18:49.000 which are sold as assets, not liabilities.\n00:18:51.000 Because who wants the fertilizer factory that makes natural gas?\n00:18:55.000 The waters are all taken in to construct the wetlands for habitat restorations.\n00:19:00.000 And then it makes natural gas, which then goes back into the city\n00:19:04.000 to power the fuel for the cooking for the city.\n00:19:08.000 So this is -- these are fertilizer gas plants.\n00:19:10.000 And then the compost is all taken back\n00:19:13.000 to the roofs of the city, where we've got farming,\n00:19:15.000 because what we've done is lifted up the city,\n00:19:19.000 the landscape, into the air to -- to restore the native landscape\n00:19:26.000 on the roofs of the buildings.\n00:19:28.000 The solar power of all the factory centers\n00:19:31.000 and all the industrial zones with their light roofs powers the city.\n00:19:34.000 And this is the concept for the top of the

city.\n00:19:36.000 We've lifted the earth up onto the roofs.\n00:19:40.000 The farmers have little bridges to get from one roof to the next.\n00:19:44.000 We inhabit the city with work/live space on all the ground floors.\n00:19:48.000 And so this is the existing city, and this is the new city.\n00:19:53.000 (Applause)\n", "extra": {"cited_message_idx": 29, "search_result_idx": null, "evidence_text": "source"}, "url": "file-O15fyq55A9kPiWRmfng811x4"}}, {"start_ix": 2035, "end_ix": 2046, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "tactiq-free-transcript-IoRjz8iTVoo.txt", "id": "file-O15fyq55A9kPiWRmfng811x4", "source": "my_files", "text": "# tactiq.io free youtube transcript\n# Cradle to cradle design | William McDonough\n# https://www.youtube.com/watch/IoRjz8iTVoo\n\n00:00:26.000 In 1962, with Rachel Carson's "Silent Spring,"\n00:00:30.000 I think for people like me in the world of the making of things,\n00:00:35.000 the canary in the mine wasn't singing.\n00:00:39.000 And so the question that we might not have birds\n00:00:42.000 became kind of fundamental to those of us wandering around\n00:00:45.000 looking for the meadowlarks that seemed to have all disappeared.\n00:00:48.000 And the question was, were the birds singing?\n00:00:51.000 Now, I'm not a scientist, that'll be really clear.\n00:00:55.000 But, you know, we've just come from this discussion of what a bird might be.\n00:00:59.000 What is a bird?\n00:01:00.000 Well, in my world, this is a rubber duck.\n00:01:04.000 It comes in California with a warning --\n00:01:06.000 "This product contains chemicals known by the State of California\n00:01:09.000 to cause cancer and birth defects or other reproductive harm."\n00:01:16.000 This is a bird.\n00:01:19.000 What kind of culture would produce a product of this kind\n00:01:22.000 and then label it and sell it to children?\n00:01:27.000 I think we have a design problem.\n00:01:30.000 Someone heard the six hours of talk that I gave\n00:01:35.000 called "The Monticello Dialogues" on NPR, and sent me this as a thank you note --\n00:01:41.000 "We realize that design is a signal of intention,\n00:01:43.000 but it also has to occur within a world,\n00:01:46.000 and we have to understand that world in order to\n00:01:50.000 imbue our designs with inherent intelligence,\n00:01:53.000 and so as we look back at the basic state of affairs\n00:01:58.000 in which we design, we, in a way, need to go to the primordial condition\n00:02:03.000 to understand the operating system and the frame conditions of a planet,\n00:02:08.000 and I think the exciting part of that is the good news that's there,\n00:02:13.000 because the news is the news of abundance,\n00:02:16.000 and not the news of limits,\n00:02:18.000 and I think as our culture tortures itself now\n00:02:23.000 with tyrannies and concerns over limits and fear,\n00:02:28.000 we can add this other dimension of abundance that is coherent,\n00:02:33.000 driven by the sun, and start to imagine\n00:02:35.000 what that would be like to share."\n00:02:42.000 That was a nice thing to get.\n00:02:44.000 That was one sentence.\n00:02:48.000 Henry James would be proud.\n00:02:50.000 This is -- I put it down at the bottom,\n00:02:52.000 but that was extemporaneous, obviously.\n00:02:55.000 The fundamental issue is that, for me,\n00:02:58.000 design is the first signal of human intentions.\n00:03:00.000 So what are our intentions, and what would our intentions be --\n00:03:04.000 if we wake up in the morning, we have designs on the world --\n00:03:07.000 well, what would our intention be as a species\n00:03:09.000 now that we're the dominant species?\n00:03:11.000 And it's not just stewardship and dominion debate,\n00:03:14.000 because really, dominion is implicit in stewardship --\n00:03:20.000 because how could you dominate something you had killed?\n00:03:22.000

And stewardship's implicit in dominion,\n00:03:24.000 because you can't be steward of something if you can't dominate it.\n00:03:26.000 So the question is, what is the first question for designers?\n00:03:32.000 Now, as guardians -- let's say the state, for example,\n00:03:35.000 which reserves the right to kill, the right to be duplicitous and so on --\n00:03:40.000 the question we're asking the guardian at this point is\n00:03:43.000 are we meant, how are we meant,\n00:03:45.000 to secure local societies, create world peace\n00:03:47.000 and save the environment?\n00:03:49.000 But I don't know that that's the common debate.\n00:03:52.000 Commerce, on the other hand, is relatively quick,\n00:03:56.000 essentially creative, highly effective and efficient,\n00:03:58.000 and fundamentally honest, because we can't exchange\n00:04:01.000 value for very long if we don't trust each other.\n00:04:05.000 So we use the tools of commerce primarily for our work,\n00:04:07.000 but the question we bring to it is,\n00:04:09.000 how do we love all the children of all species for all time?\n00:04:13.000 And so we start our designs with that question.\n00:04:16.000 Because what we realize today is that modern culture\n00:04:18.000 appears to have adopted a strategy of tragedy.\n00:04:21.000 If we come here and say, "Well, I didn't intend\n00:04:23.000 to cause global warming on the way here,"\n00:04:24.000 and we say, "That's not part of my plan,"\n00:04:26.000 then we realize it's part of our de facto plan.\n00:04:29.000 Because it's the thing that's happening because we have no other plan.\n00:04:32.000 And I was at the White House for President Bush,\n00:04:34.000 meeting with every federal department and agency,\n00:04:36.000 and I pointed out that they appear to have no plan.\n00:04:40.000 If the end game is global warming, they're doing great.\n00:04:42.000 If the end game is mercury toxification of our children\n00:04:45.000 downwind of coal fire plants as they scuttled the Clean Air Act,\n00:04:48.000 then I see that our education programs should be explicitly defined as,\n00:04:52.000 "Brain death for all children. No child left behind."\n00:04:54.000 (Applause)\n00:04:58.000 So, the question is, how many federal officials\n00:05:02.000 are ready to move to Ohio and Pennsylvania with their families?\n00:05:05.000 So if you don't have an endgame of something delightful,\n00:05:09.000 then you're just moving chess pieces around,\n00:05:11.000 if you don't know you're taking the king.\n00:05:12.000 So perhaps we could develop a strategy of change,\n00:05:15.000 which requires humility. And in my business as an architect,\n00:05:18.000 it's unfortunate the word "humility" and the word "architect"\n00:05:22.000 have not appeared in the same paragraph since "The Fountainhead."\n00:05:25.000 So if anybody here has trouble with the concept of design humility,\n00:05:30.000 reflect on this -- it took us 5,000 years\n00:05:33.000 to put wheels on our luggage.\n00:05:37.000 So, as Kevin Kelly pointed out, there is no endgame.\n00:05:42.000 There is an infinite game, and we're playing in that infinite game.\n00:05:46.000 And so we call it "cradle to cradle,"\n00:05:48.000 and our goal is very simple.\n00:05:49.000 This is what I presented to the White House.\n00:05:51.000 Our goal is a delightfully diverse, safe, healthy and just world,\n00:05:54.000 with clean air, clean water, soil and power --\n00:05:57.000 economically, equitably, ecologically and elegantly enjoyed, period.\n00:06:01.000 (Applause)\n00:06:04.000 What don't you like about this?\n00:06:07.000 Which part of this don't you like?\n00:06:09.000 So we realized we want full diversity,\n00:06:11.000 even though it can be difficult to

remember what De Gaulle said\n00:06:14.000 when asked what it was like to be President of France.\n00:06:16.000 He said, "What do you think it's like trying to run a country with 400 kinds of cheese?"\n00:06:20.000 But at the same time, we realize that our products are not safe and healthy.\n00:06:23.000 So we've designed products\n00:06:25.000 and we analyzed chemicals down to the parts per million.\n00:06:27.000 This is a baby blanket by Pendleton that will give your child nutrition\n00:06:30.000 instead of Alzheimer's later in life.\n00:06:32.000 We can ask ourselves, what is justice,\n00:06:34.000 and is justice blind, or is justice blindness?\n00:06:38.000 And at what point did that uniform turn from white to black?\n00:06:43.000 Water has been declared a human right by the United Nations.\n00:06:46.000 Air quality is an obvious thing to anyone who breathes.\n00:06:48.000 Is there anybody here who doesn't breathe?\n00:06:51.000 Clean soil is a critical problem -- the nitrification, the dead zones\n00:06:54.000 in the Gulf of Mexico.\n00:06:56.000 A fundamental issue that's not being addressed.\n00:06:58.000 We've seen the first form of solar energy\n00:07:00.000 that's beat the hegemony of fossil fuels in the form of wind\n00:07:03.000 here in the Great Plains, and so that hegemony is leaving.\n00:07:06.000 And if we remember Sheikh Yamani when he formed OPEC,\n00:07:09.000 they asked him, "When will we see the end of the age of oil?"\n00:07:12.000 I don't know if you remember his answer, but it was,\n00:07:15.000 "The Stone Age didn't end because we ran out of stones."\n00:07:19.000 We see that companies acting ethically in this world\n00:07:23.000 are outperforming those that don't.\n00:07:24.000 We see the flows of materials in a rather terrifying prospect.\n00:07:29.000 This is a hospital monitor from Los Angeles, sent to China.\n00:07:32.000 This woman will expose herself to toxic phosphorous,\n00:07:35.000 release four pounds of toxic lead into her childrens' environment,\n00:07:38.000 which is from copper.\n00:07:40.000 On the other hand, we see great signs of hope.\n00:07:42.000 Here's Dr. Venkataswamy in India, who's figured out\n00:07:45.000 how to do mass-produced health.\n00:07:47.000 He has given eyesight to two million people for free.\n00:07:51.000 We see in our material flows that car steels don't become car steel again\n00:07:54.000 because of the contaminants of the coatings --\n00:07:56.000 bismuth, antimony, copper and so on.\n00:07:58.000 They become building steel.\n00:07:59.000 On the other hand, we're working with Berkshire Hathaway,\n00:08:01.000 Warren Buffett and Shaw Carpet,\n00:08:04.000 the largest carpet company in the world.\n00:08:05.000 We've developed a carpet that is continuously recyclable,\n00:08:08.000 down to the parts per million.\n00:08:11.000 The upper is Nylon 6 that can go back to caprolactam,\n00:08:14.000 the bottom, a polyolephine -- infinitely recyclable thermoplastic.\n00:08:17.000 Now if I was a bird, the building on my left is a liability.\n00:08:21.000 The building on my right, which is our corporate campus for The Gap\n00:08:24.000 with an ancient meadow, is an asset -- its nesting grounds.\n00:08:29.000 Here's where I come from. I grew up in Hong Kong,\n00:08:31.000 with six million people in 40 square miles.\n00:08:33.000 During the dry season, we had four hours of water every fourth day.\n00:08:37.000 And the relationship to landscape was that of farmers who have been\n00:08:40.000 farming the same piece of ground for 40 centuries.\n00:08:44.000 You can't farm the same piece of ground for 40 centuries\n00:08:46.000 without understanding nutrient flow.\n00:08:49.000 My childhood summers were in the Puget Sound of Washington,\n00:08:52.000 among the first growth and big growth.\n00:08:54.000 My grandfather had been a lumberjack in the Olympics,\n00:08:56.000 so I have a lot of

tree karma I am working off.\n00:09:01.000 I went to Yale for graduate school,\n00:09:03.000 studied in a building of this style by Le Corbusier,\n00:09:05.000 affectionately known in our business as Brutalism.\n00:09:09.000 If we look at the world of architecture,\n00:09:12.000 we see with Mies' 1928 tower for Berlin,\n00:09:15.000 the question might be, "Well, where's the sun?"\n00:09:17.000 And this might have worked in Berlin, but we built it in Houston,\n00:09:20.000 and the windows are all closed. And with most products\n00:09:23.000 appearing not to have been designed for indoor use,\n00:09:25.000 this is actually a vertical gas chamber.\n00:09:28.000 When I went to Yale, we had the first energy crisis,\n00:09:31.000 and I was designing the first solar-heated house in Ireland\n00:09:33.000 as a student, which I then built --\n00:09:35.000 which would give you a sense of my ambition.\n00:09:37.000 And Richard Meier, who was one of my teachers,\n00:09:39.000 kept coming over to my desk to give me criticism,\n00:09:41.000 and he would say, "Bill, you've got to understand- --\n00:09:43.000 solar energy has nothing to do with architecture."\n00:09:51.000 I guess he didn't read Vitruvius.\n00:09:53.000 In 1984, we did the first so-called "green office" in America\n00:09:57.000 for Environmental Defense.\n00:09:58.000 We started asking manufacturers what were in their materials.\n00:10:01.000 They said, "They're proprietary, they're legal, go away."\n00:10:03.000 The only indoor quality work done in this country at that time\n00:10:05.000 was sponsored by R.J. Reynolds Tobacco Company,\n00:10:08.000 and it was to prove there was no danger\n00:10:09.000 from secondhand smoke in the workplace.\n00:10:12.000 So, all of a sudden, here I am, graduating from high school in 1969,\n00:10:16.000 and this happens, and we realize that "away" went away.\n00:10:19.000 Remember we used to throw things away, and we'd point to away?\n00:10:23.000 And yet, NOAA has now shown us, for example --\n00:10:25.000 you see that little blue thing above Hawaii?\n00:10:27.000 That's the Pacific Gyre.\n00:10:28.000 It was recently dragged for plankton by scientists,\n00:10:30.000 and they found six times as much plastic as plankton.\n00:10:34.000 When asked, they said, "It's kind of like a giant toilet that doesn't flush."\n00:10:39.000 Perhaps that's away.\n00:10:40.000 So we're looking for the design rules of this --\n00:10:42.000 this is the highest biodiversity of trees in the world, Irian Jaya,\n00:10:44.000 259 species of tree, and we described this\n00:10:48.000 in the book, "Cradle to Cradle."\n00:10:49.000 The book itself is a polymer. It is not a tree.\n00:10:53.000 That's the name of the first chapter -- "This Book is Not a Tree."\n00:10:56.000 Because in poetics, as Margaret Atwood pointed out,\n00:10:59.000 "we write our history on the skin of fish\n00:11:01.000 with the blood of bears."\n00:11:04.000 And with so much polymer, what we really need\n00:11:05.000 is technical nutrition, and to use something\n00:11:08.000 as elegant as a tree -- imagine this design assignment:\n00:11:11.000 Design something that makes oxygen, sequesters carbon,\n00:11:13.000 fixes nitrogen, distills water, accrues solar energy as fuel,\n00:11:17.000 makes complex sugars and food, creates microclimates,\n00:11:21.000 changes colors with the seasons and self-replicates.\n00:11:27.000 Well, why don't we knock that down and write on it?\n00:11:29.000 (Laughter)\n00:11:35.000 So, we're looking at the same criteria\n00:11:37.000 as most people -- you know, can I afford it?\n00:11:39.000 Does it work? Do I like it?\n00:11:41.000 We're adding the Jeffersonian agenda, and I come from Charlottesville,\n00:11:43.000 where I've had the privilege of living

in a house designed by Thomas Jefferson.\n00:11:47.000 We're adding life, liberty and the pursuit of happiness.\n00:11:53.000 Now if we look at the word "competition,"\n00:11:54.000 I'm sure most of you've used it.\n00:11:56.000 You know, most people don't realize it comes from\n00:11:57.000 the Latin competere, which means strive together.\n00:12:00.000 It means the way Olympic athletes train with each other.\n00:12:03.000 They get fit together, and then they compete.\n00:12:06.000 The Williams sisters compete -- one wins Wimbledon.\n00:12:08.000 So we've been looking at the idea of competition\n00:12:11.000 as a way of cooperating in order to get fit together.\n00:12:15.000 And the Chinese government has now --\n00:12:16.000 I work with the Chinese government now --\n00:12:18.000 has taken this up.\n00:12:20.000 We're also looking at survival of the fittest,\n00:12:22.000 not in just competition terms in our modern context\n00:12:24.000 of destroy the other or beat them to the ground,\n00:12:27.000 but really to fit together and build niches\n00:12:29.000 and have growth that is good.\n00:12:31.000 Now most environmentalists don't say growth is good,\n00:12:33.000 because, in our lexicon, asphalt is two words: assigning blame.\n00:12:38.000 But if we look at asphalt as our growth,\n00:12:41.000 then we realize that all we're doing is destroying\n00:12:43.000 the planetary's fundamental underlying operating system.\n00:12:47.000 So when we see E equals mc squared come along, from a poet's perspective,\n00:12:52.000 we see energy as physics, chemistry as mass,\n00:12:54.000 and all of a sudden, you get this biology.\n00:12:56.000 And we have plenty of energy, so we'll solve that problem,\n00:12:59.000 but the biology problem's tricky, because as we put through\n00:13:02.000 all these toxic materials that we disgorge,\n00:13:05.000 we will never be able to recover that.\n00:13:07.000 And as Francis Crick pointed out, nine years\n00:13:09.000 after discovering DNA with Mr. Watson,\n00:13:12.000 that life itself has to have growth as a precondition --\n00:13:16.000 it has to have free energy, sunlight\n00:13:18.000 and it needs to be an open system of chemicals.\n00:13:21.000 So we're asking for human artifice to become a living thing,\n00:13:24.000 and we want growth, we want free energy from sunlight\n00:13:26.000 and we want an open metabolism for chemicals.\n00:13:29.000 Then, the question becomes not growth or no growth,\n00:13:31.000 but what do you want to grow?\n00:13:34.000 So instead of just growing destruction,\n00:13:36.000 we want to grow the things that we might enjoy,\n00:13:38.000 and someday the FDA will allow us to make French cheese.\n00:13:41.000 So therefore, we have these two metabolisms,\n00:13:45.000 and I worked with a German chemist, Michael Braungart,\n00:13:47.000 and we've identified the two fundamental metabolisms.\n00:13:49.000 The biological one I'm sure you understand,\n00:13:51.000 but also the technical one, where we take materials\n00:13:53.000 and put them into closed cycles.\n00:13:55.000 We call them biological nutrition and technical nutrition.\n00:13:58.000 Technical nutrition will be in an order of magnitude of biological nutrition.\n00:14:02.000 Biological nutrition can supply about 500 million humans,\n00:14:05.000 which means that if we all wore Birkenstocks and cotton,\n00:14:07.000 the world would run out of cork and dry up.\n00:14:10.000 So we need materials in closed cycles,\n00:14:12.000 but we need to analyze them down to the parts per million\n00:14:14.000 for cancer, birth defects, mutagenic effects,\n00:14:17.000 disruption of our immune systems, biodegradation, persistence,\n00:14:20.000 heavy metal content, knowledge of how we're making them\n00:14:23.000 and their production and so on.\n00:14:25.000 Our first product was

a textile where we analyzed 8,000 chemicals\n00:14:29.000 in the textile industry.\n00:14:30.000 Using those intellectual filters, we eliminated [7,962.]\n00:14:35.000 We were left with 38 chemicals.\n00:14:37.000 We have since databased the 4000 most commonly used chemicals\n00:14:40.000 in human manufacturing, and we're releasing this database into the public in six weeks.\n00:14:45.000 So designers all over the world can analyze their products\n00:14:47.000 down to the parts per million for human and ecological health.\n00:14:52.000 (Applause)\n00:14:57.000 We've developed a protocol so that companies can send\n00:15:00.000 these same messages all the way through their supply chains,\n00:15:03.000 because when we asked most companies we work with -- about a trillion dollars\n00:15:06.000 -- and say, "Where does your stuff come from?" They say, "Suppliers."\n00:15:08.000 "And where does it go?"\n00:15:10.000 "Customers."\n00:15:11.000 So we need some help there.\n00:15:12.000 So the biological nutrients, the first fabrics --\n00:15:14.000 the water coming out was clean enough to drink.\n00:15:16.000 Technical nutrients -- this is for Shaw Carpet, infinitely reusable carpet.\n00:15:20.000 Here's nylon going back to caprolactam back to carpet.\n00:15:23.000 Biotechnical nutrients -- the Model U for Ford Motor,\n00:15:26.000 a cradle to cradle car -- concept car.\n00:15:28.000 Shoes for Nike, where the uppers are polyesters, infinitely recyclable,\n00:15:32.000 the bottoms are biodegradable soles.\n00:15:35.000 Wear your old shoes in, your new shoes out.\n00:15:37.000 There is no finish line.\n00:15:39.000 The idea here of the car is that some of the materials\n00:15:41.000 go back to the industry forever, some of the materials go back to soil --\n00:15:44.000 it's all solar-powered.\n00:15:46.000 Here's a building at Oberlin College we designed\n00:15:48.000 that makes more energy than it needs to operate and purifies its own water.\n00:15:52.000 Here's a building for The Gap, where the ancient grasses\n00:15:54.000 of San Bruno, California, are on the roof.\n00:15:58.000 And this is our project for Ford Motor Company.\n00:16:00.000 It's the revitalization of the River Rouge in Dearborn.\n00:16:02.000 This is obviously a color photograph.\n00:16:06.000 These are our tools. These are how we sold it to Ford.\n00:16:10.000 We saved Ford 35 million dollars doing it this way, day one,\n00:16:13.000 which is the equivalent of the Ford Taurus\n00:16:15.000 at a four percent margin of an order for 900 million dollars worth of cars.\n00:16:19.000 Here it is. It's the world's largest green roof, 10 and a half acres.\n00:16:22.000 This is the roof, saving money,\n00:16:25.000 and this is the first species to arrive here. These are killdeer.\n00:16:29.000 They showed up in five days.\n00:16:32.000 And we now have 350-pound auto workers\n00:16:34.000 learning bird songs on the Internet.\n00:16:38.000 We're developing now protocols for cities --\n00:16:40.000 that's the home of technical nutrients.\n00:16:42.000 The country -- the home of biological. And putting them together.\n00:16:45.000 And so I will finish by showing you a new city\n00:16:47.000 we're designing for the Chinese government.\n00:16:49.000 We're doing 12 cities for China right now,\n00:16:52.000 based on cradle to cradle as templates.\n00:16:54.000 Our assignment is to develop protocols for the housing\n00:16:57.000 for 400 million people in 12 years.\n00:16:59.000 We did a mass energy balance -- if they use brick,\n00:17:01.000 they will lose all their soil and burn all their coal.\n00:17:04.000 They'll have cities with no energy and no food.\n00:17:06.000 We signed a Memorandum of Understanding --\n00:17:08.000 here's Madam Deng Nan, Deng Xiaoping's daughter --\n00:17:10.000 for China to adopt cradle to

cradle.\n00:17:12.000 Because if they toxify themselves, being the lowest-cost producer,\n00:17:16.000 send it to the lowest-cost distribution -- Wal-Mart -- \n00:17:18.000 and then we send them all our money, what we'll discover is that\n00:17:21.000 we have what, effectively, when I was a student,\n00:17:24.000 was called mutually assured destruction.\n00:17:27.000 Now we do it by molecule. These are our cities.\n00:17:30.000 We're building a new city next to this city; look at that landscape.\n00:17:33.000 This is the site.\n00:17:35.000 We don't normally do green fields, but this one is about to be built,\n00:17:39.000 so they brought us in to intercede.\n00:17:41.000 This is their plan.\n00:17:43.000 It's a rubber stamp grid that they laid right on that landscape.\n00:17:46.000 And they brought us in and said, "What would you do?"\n00:17:49.000 This is what they would end up with, which is another color photograph.\n00:17:53.000 So this is the existing site, so this is what it looks like now,\n00:17:56.000 and here's our proposal.\n00:17:58.000 (Applause)\n00:18:02.000 So the way we approached this\n00:18:04.000 is we studied the hydrology very carefully.\n00:18:06.000 We studied the biota, the ancient biota,\n00:18:08.000 the current farming and the protocols.\n00:18:10.000 We studied the winds and the sun to make sure everybody in the city\n00:18:12.000 will have fresh air, fresh water and direct sunlight\n00:18:18.000 in every single apartment at some point during the day.\n00:18:21.000 We then take the parks and lay them out as ecological infrastructure.\n00:18:25.000 We lay out the building areas.\n00:18:28.000 We start to integrate commercial and mixed use\n00:18:29.000 so the people all have centers and places to be.\n00:18:32.000 The transportation is all very simple,\n00:18:34.000 everybody's within a five-minute walk of mobility.\n00:18:37.000 We have a 24-hour street, so that there's always a place that's alive.\n00:18:42.000 The waste systems all connect.\n00:18:44.000 If you flush a toilet, your feces will go to the sewage treatment plants,\n00:18:49.000 which are sold as assets, not liabilities.\n00:18:51.000 Because who wants the fertilizer factory that makes natural gas?\n00:18:55.000 The waters are all taken in to construct the wetlands for habitat restorations.\n00:19:00.000 And then it makes natural gas, which then goes back into the city\n00:19:04.000 to power the fuel for the cooking for the city.\n00:19:08.000 So this is -- these are fertilizer gas plants.\n00:19:10.000 And then the compost is all taken back\n00:19:13.000 to the roofs of the city, where we've got farming,\n00:19:15.000 because what we've done is lifted up the city,\n00:19:19.000 the landscape, into the air to -- to restore the native landscape\n00:19:26.000 on the roofs of the buildings.\n00:19:28.000 The solar power of all the factory centers\n00:19:31.000 and all the industrial zones with their light roofs powers the city.\n00:19:34.000 And this is the concept for the top of the city.\n00:19:36.000 We've lifted the earth up onto the roofs.\n00:19:40.000 The farmers have little bridges to get from one roof to the next.\n00:19:44.000 We inhabit the city with work/live space on all the ground floors.\n00:19:48.000 And so this is the existing city, and this is the new city.\n00:19:53.000 (Applause)\n", "extra": {"cited_message_idx": 29, "search_result_idx": null, "evidence_text": "source"}, "url": "file-O15fyq55A9kPiWRmfng811x4"}}, {"start_ix": 2233, "end_ix": 2244, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQv0sZY", "source": "my_files", "text": "\n\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen

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\n\n\nv\n\nForeword\n\nPredictions of the future can be hazardous or downright foolish. But the \n failure of foresight\u2014the inability to read the hand-writing on the wall\u2014is \never more so. Designers of all kinds work in the conflicted space between \nthese two poles. Their goal is to improve small parts of a rapidly changing \nworld with the tools of form, scale, materials, energy, water, color, landscape, \nand the creativity that is found most often at the grassroots level. But what \nneeds to be improved?\n\nThe short answer is \u201ca great deal,\u201d including an energy system that is rapidly \ndestabilizing the climate, an economy

driving tens of thousands of species to \nextinction, a political system that sanctions gross inequality, an uncivil society, \nthe growing autism toward the natural world, and a global system mired in \nconflict. These are related problems, parts of a larger civilizational crisis with \nroots traceable to the seventeenth century authors of the mechanical world \nview. But there are deeper pathologies with footprints back to our ancient \nschizophrenia toward the natural world that had to be tamed a bit before it \ncould be appreciated.\n\nDesigners, however, typically do not work at the macro scale of civilization \nfor good reasons. Whether as architecture, engineering, materials, or land-\nscapes, design is bounded by the minute particulars of projects in their spe-\ncific social, cultural, and historical context. As a result designers work from the \nbottom up on projects at the building, neighborhood, and city scales. But the \nbig problems mentioned above are in large part the sum total of bad design \n(including that of public policies) at lower levels. There are many reasons for \nbad design, not the least of which is a professional focus on form-making, \noften oblivious to other consequences.\n\nBeginning in the 1970s a few renegade architects like Sim Van der Ryn in \nCalifornia became concerned about the collateral environmental impacts \nof the design professions. Van der Ryn envisioned ecological design as the \n\n\n\nvi Foreword\n\n calibration of buildings with their places, which required further integral \nunderstanding of landscapes, energy flows, waste cycling, materials, sun-\nlight, water, and ecological processes. Ecological design, in other words, \naims to calibrate human actions with the way natural systems work as par-\nticular places, larger landscapes, and whole ecologies. It aims to work with, \nnot against, the flows of energy and natural cycling of materials. The goal, \nin short, was to reduce environmental impacts of the \u201cbuilt environment\u201d \nin a civilization that prized economic expansion above all else with hardly a \nthought for the morrow.\n\nWhat began so modestly in the 1970s has rapidly grown into a global move-\nment to harmonize buildings, neighborhoods, and cities with the surround-\ning nature. After the publication of the Brundtland Commission report in 1987, \nthe goals of ecological designers expanded to embrace the wider (but vague) \nmission of sustainability. But we know now that that word signifies more \nthan was once assumed. Sustainability is the sum total of other qualities. As \nChattanooga City Councilman, David Crockett puts it: \u201cmake it clean, green, \nsafe, and fair and it will be sustainable.\u201d The left side of that equation, how-\never, requires the elimination of the growing inequality that is a precursor to \n violence and ruined lives. It further requires rethinking our core assumptions \nabout the relation between economic growth and real progress. Ecological \ndesign, in other words, must be large enough in foresight, scope, and heart \nto include the social and economic environment in which it is embedded. In \nthat way ecological design is a radical endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other

concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2 Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of better possibilities, not just makers \nof buildings and things.\n\nA rapidly warming climate will add to the design challenges ahead. Design-\ners must reckon with a world of higher temperatures, stronger winds, more \nfrequent and larger storms, rising ocean levels, longer droughts, much larger \nrainfall events, and new diseases.7 These will likely cause interruptions in \nsupplies of food, energy, and water and could trigger social disruptions. We \nmust design with the awareness of the fragility of our civilization, as Jared \nDiamond and others warn. We must build in the ability to maintain hope and \nfunction as a society in emergency (and possibly breakdown) and lay the \nbasis for recovery.8\n\nThe Great Work of our generation is to create a post-fossil-fuel and post-\nconsumer economy that is regenerative, fair, durable, resilient, convivial, and \ndemocratic. It must be powered by renewable energy. It

must be a circular \neconomy that recycles, reuses, or transforms its wastes. Of necessity it will be \nmuch more focused on essentials of food, energy, shelter, clean water, educa-\ntion, the arts, and rootedness in place and bioregion. It will be built by local \npeople who cherish and understand their places\nThe file is too long and its contents have been truncated.\n", "extra": {"cited_message_idx": 30, "search_result_idx": null, "evidence_text": "source"}, "url": "file-RAzDllTYQLyhHItDOsQv0sZY"}}, {"start_ix": 2791, "end_ix": 2802, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "id": "file-RAzDllTYQLyhHItDOsQv0sZY", "source": "my_files", "text": "\n\n\n\nRegenerative \nDevelopment \nand Design\nA Framework for \n\nEvolving Sustainability\n\nPamela Mang \nBen Haggard\n\nRegenesis\n\n\n\nCover Design: Wiley\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael Sotnikov, \nCheonggyecheong Festival; Courtesy of Playa Viva \u00a9 David Leventhal; Teachers \u00a9 Regenesis Group; \u00a9 Sasaki \nAssociates, Las Salinas Master Plan\n\nThis book is printed on acid-free paper. \n\nCopyright \u00a9 2016 by John Wiley & Sons, Inc. All rights reserved\n\nPublished by John Wiley & Sons, Inc., Hoboken, New Jersey\nPublished simultaneously in Canada\n\nNo part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any \nmeans, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section \n107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or \nauthorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood \nDrive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the web at www.copyright.com. Requests to \nthe Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River \nStreet, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at www.wiley.com/go/permissions.\n\nLimit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this \nbook, they make no representations or warranties with the respect to the accuracy or completeness of the contents \nof this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No \nwarranty may be created or extended by sales representatives or written sales materials. The advice and strategies \ncontained herein may not be suitable for your situation. You should consult with a professional where appropriate. \nNeither the publisher nor the author shall be liable for damages arising herefrom.\n\nFor general information about our other products and services, please contact our Customer Care Department \nwithin the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.\n\nWiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with \nstandard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to \nmedia such as a CD or DVD that is not included in the version you purchased, you may download this material at \nhttp://booksupport.wiley.com. For more information about Wiley products, visit www.wiley.com.\n\nLibrary of Congress Cataloging-in-Publication Data: \n\n9781118972861 (pbk); 978-1-118-97291-5 (ebk);\n978-1-118-97292-2 (ebk); 978-1-119-14969-9 (ebk)\n\nPrinted in the United States of America\n\n10 9 8 7 6 5 4 3 2 1\n\nhttp://www.copyright.com\nhttp://www.wiley.com/go/permissions\nhttp://booksupport.wiley.com\nhttp://www.wiley.com\n\n\niii\n\nContents\n\n

endeavor in the true sense of the word, \nit gets to the root of what ails us.\n\nThe work described in this book takes design to yet another level that aims \nto regenerate the fabric of life and repair the wounds and tears inflicted \nby the carelessness of the fossil-fuel-powered growth economy. Regenera-\ntive design strives to create the conditions of health which ecologist Aldo \nLeopold once defined as \u201cthe capacity of the land for self-renewal.\u201d It aims, \nin other words, for wholeness, a word linked etymologically with healing, \nhealth, and Holy. Designers in this sense are midwives to the birth of a \nlarger, deeper, and more resilient kind of order capable of regenerating the \nconditions of life and health. It is predicated on the co-evolution of human \nand natural systems, each supporting the other. In Robert Grudin\u2019s words, \n\n\n\nForeword vii\n\ndesign, \u201cunlike any other concept . . . calls for us to create a unity of part with \nwhole, a concord of form and function, a finished product that is harmoni-\nous with society and with nature.\u201d1\n\nIn this history the trend is for design questions to go to deeper levels and \ndesign projects to become catalysts for still further changes. In architect Stuart \nWalker\u2019s words design must, \u201ctranscend utility and conventional function-led, \nand especially technology-led approaches.\u201d2 Designers, in his view, must rise \nabove \u201cthe calculated creation of dissatisfaction\u201d and \u201cthink more compre-\nhensively about the products we already produce and their implications.\u201d3 \nDesign, in other words, must be an act of integration, not just specialization, \nwith the goal of creating a wholeness that includes spiritual well-being. And \nit should start with those who serve as designers.4\n\nRegenerative design has many effects. For one, it changes the relationship \nof people to their places. It can restore the reservoir of practical ecological \ncompetence at the local level allowing us to do more for ourselves and \nfor each other\u2014the things that we once did naturally as capable people, \ngood neighbors, and active citizens. It helps ground us by better inform-\ning us of where we are and the ecology and energy flows by which we are \nsustained in a particular place. In a world where any one place has come \nto look much like any other, we have lost sight of the fine print of our lives \nand how we are provisioned with food, energy, materials, and spiritual \nsustenance.\n\nWe are mostly ignorant of the costs and consequences of the systems that pro-\nvide for us so seamlessly and oblivious to their inherent fragility. Regenerative \ndesign helps us know where we are and how to be competent, respectful, \nand generous there. Our places should be ecologically designed landscapes \nwhose multiple functions retain water for drought periods, manage floods, \ngrow food and fiber, sustain wildlife, and absorb carbon. They should be \nworking systems that blend agro-forestry, mixed-use permacultures, inten-\nsive agricultural and gardening zones, viticulture, aquaculture, water purifica-\ntion, restoration, and recreation. And they should be loved and managed by \nlocal citizens who use them to train young people in the essentials of man-\naged integrated ecologies.5\n\n\nviii Foreword\n\nFurther, regenerative design should enhance the opportunities for caring, \nconviviality, celebration, and face-to-face democracy.6 Communities with \nfront porches, public squares, community gardens and solar systems, \nneighborhood stores, corner pubs, and open places of worship are more \nlikely to thrive in the years ahead. This is because they create the conditions \nfavorable to neighborliness, community cohesion, and buffering from hard-\nships. Good design should engage people in the making of their homes, \nneighborhoods, towns, and regions. It should increase civic intelligence, \nsense of potential, and joy in life. In this way, designers are facilitators in a \nlarger public conversation, architects of

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