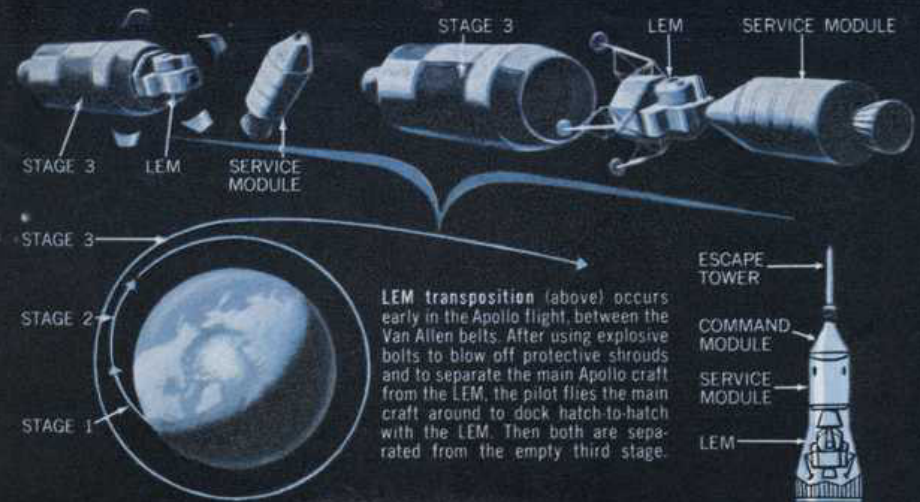


MAN TO THE MOON

What will that first trip be like when—soon—brave men soar into the skies to conquer the moon? Here is a preview of that great adventure

By Tom Alexander Author of *Project Apollo: Man to the Moon* (Harper and Row, New York)

Illustrations by Ray Pioch

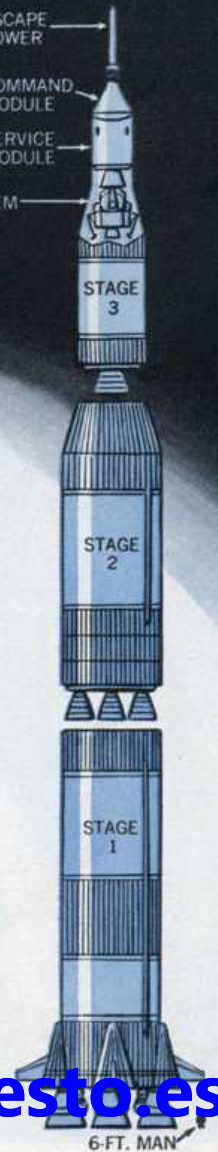


THE FLIGHT

Atop their vast and audibly seething assembly, three men lie breathing quick in concentration as earth and rocket begin to cast off lines. In the last second a hundred switches clatter, fires are kindled, valves open, flames belch and cough smokily. Long, slow vibrations run upward through the rocket to jostle the crew, then begin smoothing away as the launch pad's hold-down clamps fall. The Saturn poises, struggling against earth's gravity and an atmosphere clinging like glue to its sides. It rises in a thunderous stroke to stage-one burnout at 150 seconds and 36 miles. . . .

The million-pound thrust of the second stage cuts in to spiral the astronauts outward toward their parking orbit, where the third stage burns briefly, circularizing their elliptical path. For an hour and a half the craft drifts around its orbit. The computer muses on radar data coming up from earth and resets verity into the inertial-guidance system, whose delicate sense of direction has been a little added by the stresses of the last few minutes. Finally, while the craft passes over that side of earth most distant from the moon, the third stage fires once more. Their radiation counters crackle warningly as they soak into the inner Van Allen belt from diminishing. They have 10 minutes to maneuver the LEM and the LEM to fit it tip-to-tip to the Apollo capsule.

CONTINUED



fernando.valderrama@presto.es



UNIVAC: "You're trying to divide by zero" fernando.valderrama@presto.es

Buckminster Fuller

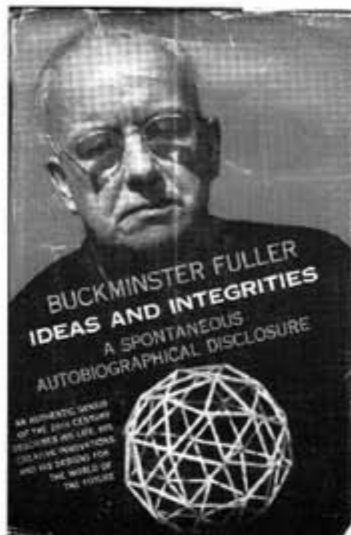
The insights of Buckminster Fuller are what initiated this catalog.

Of the four books reviewed here, *Nine Chains to the Moon* is his earliest and most openly metaphysical. *Ideas and Integrities* has most personal. *No More Secondhand God* the most recent. *World Design Science Decade* the most programmatic.

People who beef about Fuller mainly complain about his repetition — the same ideas again and again, it's embarrassing. It is embarrassing, also illuminating, because the same notions take on different uses when re-approached from different angles or with different contexts. Fuller's lectures have a raft of rich nonlinear endless-introduction fall of convergent surprises.

Some are put off by his language, which makes demands on your head like suddenly discovering an extra engine in your car — if you don't let it drive you faster, it'll drag you. Fuller won't wait. He spent two years silent after illusory language got him in trouble, and he returned to human communication with a redesigned instrument.

With that, empirical curiosity, and New England perseverance Fuller has forged one of the most original personalities and functional intellects of the age.



Ideas and Integrities
Buckminster Fuller
1963, 310 pp.
\$10.00 postpaid

Standing by the lake on a jump-or-think basis, the very first spontaneous question coming to mind was, "If you put aside everything you've ever been asked to believe and have recourse only to your own experiences do you have any conviction arising from those experiences which either demands or must assume a prior greater intellect than the intellect of man?" The answer was swift and positive. Experience had clearly demonstrated an a priori anticipatory and only intellectually apprehensible orderliness of interactive principles operating in the universe into which we are born. These principles are discovered but are never invented by man. I said to myself, "I have faith in the integrity of the anticipatory intellectual wisdom which we may call 'God.'" My next question was, "Do I know best or does God know best whether I may be of any value to the integrity of the universe?" The answer was, "You don't know and no man knows, but the fact is you have just established out of experience imposed recognition of the a priori wisdom of the fact of your being." Apologetically addressing myself, I said, "You do not have the right to eliminate yourself, you do not belong to you. You belong to the universe. The slight chance of you will forever remain obscure to you, but you may assume that you are fulfilling your significance if you apply yourself to converting all your experience to highest advantage of others. You and all men are here for the sake of other men."



WDSO Document 1

World society has throughout its millions of years on earth made its judgments upon visible, tangible, sensorially demonstrable criteria. We may safely say that the world is keeping its eye on the unimportant visible 1 percent of the historical transformation while missing the significance of the 99 percent of overall, unseen changes. Forms are necessarily visible and forms no longer can "follow functions" because the significant functions are invisible.

There are very few men today who are disciplined to comprehend the totally integrating significance of the 99 percent invisible activity which is coexisting to reshape our future. There are approximately no warnings being given to society regarding the great changes ahead. This is only the obvious general apprehension that man may be about to annihilate himself. To the few who are disciplined to deal with the invisibly integrating trends it is increasingly readable in the trends that man is about to become almost 100 percent successful as an occupant of universe.



Nine Chains to the Moon
Buckminster Fuller
1938, 1963, 275 pp.
\$2.45

both from:
Sour: World University Press
600 Grand
Cair (lines 52303)
or WH/ARTH CATALOG

No More Secondhand God
Buckminster Fuller
1963, 163 pp.
\$2.25 postpaid

Thinking is a putting-aside, rather than a putting-in discipline, e.g., putting aside the tall grasses in order to isolate the trail into informative visibility. Thinking is FM — frequency modulation — for it results in tuning-out of interferences as a result of definitive resolution of the exclusively turned-in or accepted feed-back messages' pattern of interrelationships.

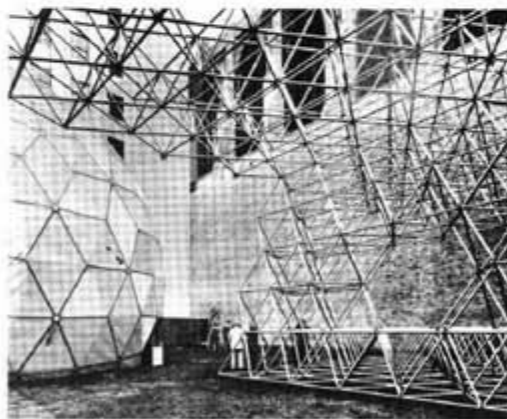
[Circumstantial Halo] No More Secondhand God

Common to all such "human" mechanisms — and without which they are unbreakable contraptions — is their guidance by a pheromone caplan.

This pheromone caplan has neither weight nor sensorial tangibility, as has often been scientifically proven by careful weighing operations at the moment of abandonment of the ship by the pheromone captain, i.e., at the instant of "death." He may be shared to the variant of polarity dominance in our bipolar electric world which, when balanced and unit, vanishes as absolute unity 1 or 0. With the pheromone captain's departure, the mechanism becomes inoperative and very quickly disintegrates into basic chemical elements.

This captain has not only an infinite self-identity characteristic but, also, an infinite understanding. He has furthermore, infinite sympathy with all captains of mechanisms similar to his.

An illuminating reorganization indicated that capitalists — being pheromone, abstract, invisible, and looked to other captains by a bond of understanding as proven by their recognition of each other's signals and the meaning thereof by reference to a common direction toward "profit" — are actually totally related, but are one and the same captain. Mathematically, since characteristics of unity exist, they cannot be non-identical.



Our Air Force Phoenixes were installed in the arctic mostly by ex-marines and others who had never seen them before. The mass production technology made assembly possible at an average rate of 14 hours each. One of these Phoenixes was loaned by the U.S. Air Force to the Museum of Modern Art in New York City for an exhibition of my work as 1959-1960. It took regular building trades skilled labor one month to assemble the dome in New York City.

WDSO Document 2

I define "synergy" as follows: Synergy is the unique behavior of whole systems, unpredicted by behavior of their respective subsystems' events.

[Ideas and Integrities]

softness (self preoccupation pursued until self loses its self) and generates fear and spontaneous random surging, i.e., part of which is mod outburst in unpermeated wave by the individuality random components.

[No More Secondhand God]

Whole Systems

To start off with it is demonstrated in the array of events which we have touched on that we don't have to "earn a living" anymore. The "living" has all been earned for us forever. Industrialization's reach is cumulative in construction to the inherently terminal, discontinuous, temporary wealth of the craft areas of civilization such as the Bronze Age or Stone Age. If we only understood how that cumulative industrial wealth has come about, we could stop playing obsolete games, but that is a task that cannot be accomplished by political and social reforms. Man is no deity conditioned in his reflexes by his misanthropic of some function that he has too many internally complex to yield to political colonization. The obsolete games will be abandoned only when realistic, happier and more interesting games come along to displace the obsolete games.

[WDSO Document 3]

Tension and Compression are complementary functions of structure. Therefore as functions they only co-exist. When pulling a tensile rope the grill contracts in compression. When we load a column in compression its grill tends to expand in tension. When we investigate tension and compression, we find that compression members, as you all know as arches, have very limited lengths in relation to their cross sections. They get too long and too slender and will readily break. Tension members, when you put them under load, approximately, (almost but never entirely), straight instead of trying to curve more and more as do the too compression loaded columns. The contraction of the tension members in their grill, when tensionally loaded, brings its atoms closer together which makes it even stronger. There is no (yet) ratio of proportionality to length in tensile members of structural systems. There is a fundamental limit ratio in compression. Therefore when nature has very large tasks to do, such as coining the solar system or the universe she arranges for structural systems both in the microcosm and macrocosm of the following manner: compression, and of non-simultaneous, islands by comprehensive tensile — compression stands in a non-simultaneous universe of tension. The Universe is a tenacity.

[WDSO Document 2]

I was born cross-eyed. Not said I was four years old was, I discovered that the eye was caused by my being abnormally brightened. My vision was thereafter fully corrected with lenses. Until four I could see only large patterns, houses, trees, outlines of people with blurred coloring. When I saw two dark areas in human faces, I did not see a human eye or a hand or a human hair until I was four. Despite my new ability to appreciate details, my childhood's spontaneous dependence only upon big pattern clues has persisted.

I am convinced that neither I nor any other human, past or present, was or is a genius. I am convinced that what I have every physically normal child also has at birth. We could, of course, hypothesize that all babies are born geniuses and get verily de-genitricated. Unfavorable circumstances, straightjackets, rigid mental systems, and ignorantly articulated love and fear of elders tend to shut off many of the child's brain capability avenues. I am lucky in avoiding to many disconnections.

There is luck in everything. My luck is that I was born cross-eyed, was looked to ineffectively from the establishment that I was finally forced either to parrot or to employ some of those faculties with which we are all endowed — the use of which circumstances had previously so frustrated as to have to put them in the deep freezer; whence only to tentatively hot situations could provide enough heat to melt them back into usability.

[WDSO Document 5]

In the 1930's with but little open country highway mileage in operation, automobile accidents were concentrated and frequent. Wrecking occurred within our urban and suburban regions. Witnessing a number of accidents, I observed that warning signs later grew up along the roads leading to danger points and that most traffic and motorcycle police were put on duty. The solution lay in curbing the mania by reforming the motorists. A relatively few special individual drivers with much experience, steady temperament, good concentration and natural tendency to anticipate and understand the psychology of others emerged as "good" and approximately accident-free drivers. Many others were accident prone.

In less of the after-the-fact curative reform, tending to highly specialized individual offender case histories, my philosophy urged the anticipatory avoidance of the accident potentials through invention of generalized highway chokers, grade separators, cover lighting and adequately banked curves and automatic traffic control stop-lighting systems. I saw no reason why the problem shouldn't be solved by preventative design rather than attempted reforms. My resolve: Reshape environment; don't try to reshape man.

[WDSO Document 1]



The Honeywell edition of Fuller's world map (more brightly colored than previous editions) is available.

\$4.60 postpaid
the P.L. 09
C/O World Resources Inventory
14, Woburn 62001

However, man unconsciously sorting mail on an express train with unutilized faith that the engineer is competent, that the switchmen are not asleep, that the track workers are doing their job, that the technologists who designed the train and the rails knew their stuff, that the thousands of others whom he may never know by last or name are collecting parts, paying for repairs, and so handling assets that he will be paid a week from today and again the week after that, and that all the time his family is safe and in well being without his personal protection constitutes a whole new era of evolution — the first really "new" since the beginning of the spoken word. In fact, out of the understanding innate in the spoken word was industrialization wrought after millenniums of seemingly wilderness apathy with.

[The Unfinished Epic of Industrialization]

The Unfinished Epic of Industrialization

by Buckminster Fuller 1963, 227 pp.
\$4.60 postpaid
World Resources Inventory
14, Woburn 62001

Concept Tenets — SELF DISCIPLINES

Working assumptions, cautions, encourage minds, and restrain of intuitive formulations and spontaneous actions. My own say: "The not evident if I am not understood as long as I am not understood."

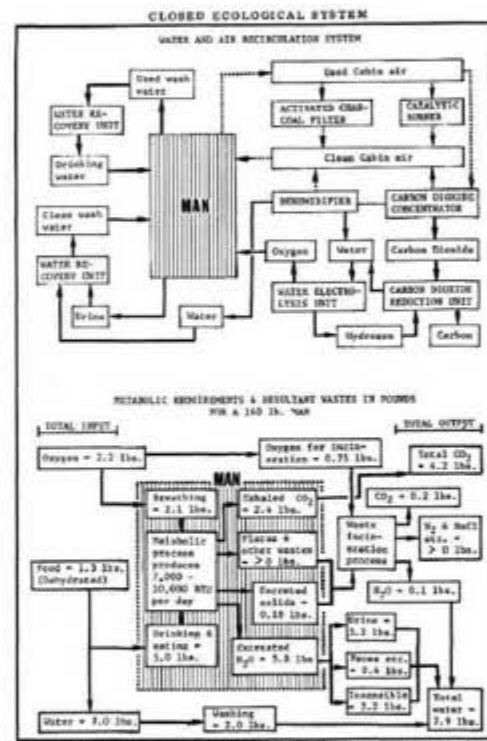
Personal Self-Discipline. In 1927 I gave up forever the general economic system of society, i.e., that every individual who wants to survive must sell a thing, i.e., substituted, therefore, the finding made in concept one, i.e., an individual's anthropic responsibility in universe. I sought for the tasks that needed to be done that no one else was doing or attending to do, which if done would practically and economically advantage society and eliminate pain.

As a consequence, it was necessary for me to discipline my faculties to develop technical and scientific capabilities to invent the physical innovations and their service industry logistics.

My Recommendations for a Curriculum of Design Science

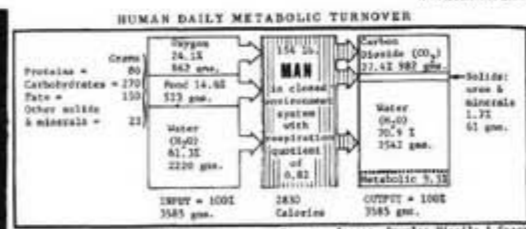
1. Synergics
2. General Systems Theory
3. Theory of Games (Non-Zero-sum)
4. Chemistry and Physics
5. Topology, Projective Geometry
6. Cybernetics
7. Communications
8. Meteorology
9. Geology
10. Biology
11. Sciences of Energy
12. Political Geography
13. Ergonomics
14. Production Engineering

[WDSO Document 5]



Sources: (1) E. S. Phillips, R. L. Butterton, Douglas Missile & Space Systems Development Interplanetary Mission Life Support System, 1965.
(2) NASA: ASD Report TR 61-363.

WDSO Document 6



Sources: Rogers, Douglas Missile & Space Publication No. 4, 1961, p. 8.

The World Design Science Decade documents contain some that is in the other books and much that isn't. The 6 volumes set costs \$10.50 postpaid to students. Personal and school orders \$30.00.

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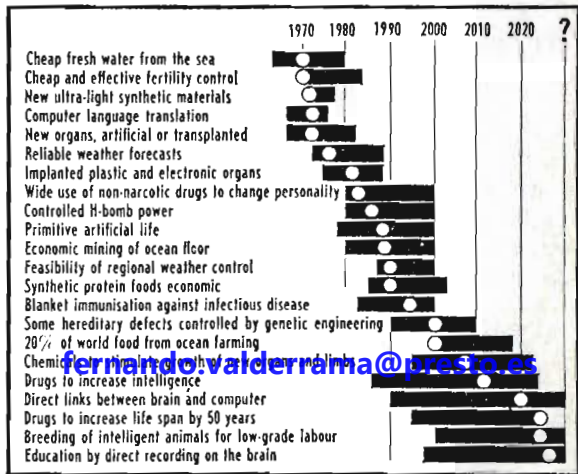
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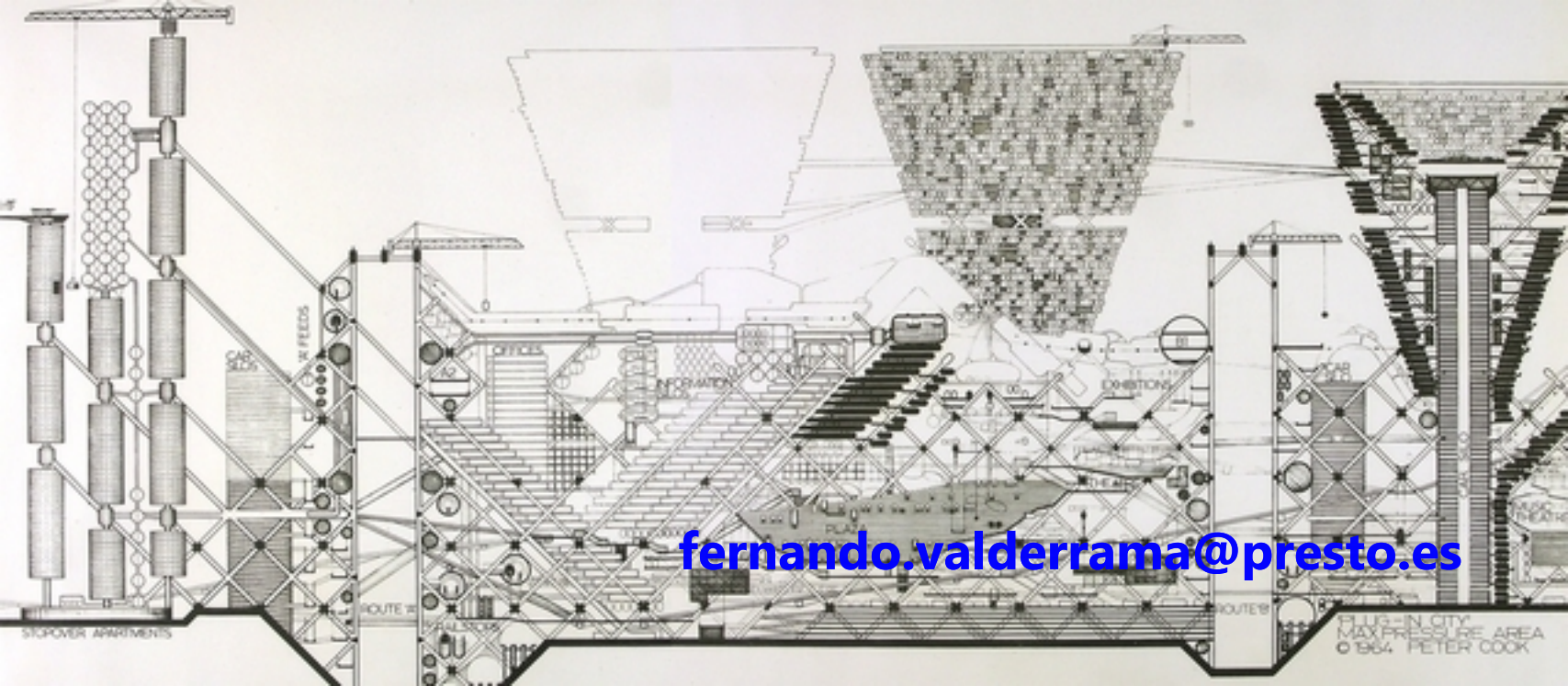
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215. Delphi Technique, 1967. Experts predict when an invention is most likely to occur, given a certain latitude on either side of the white dot.

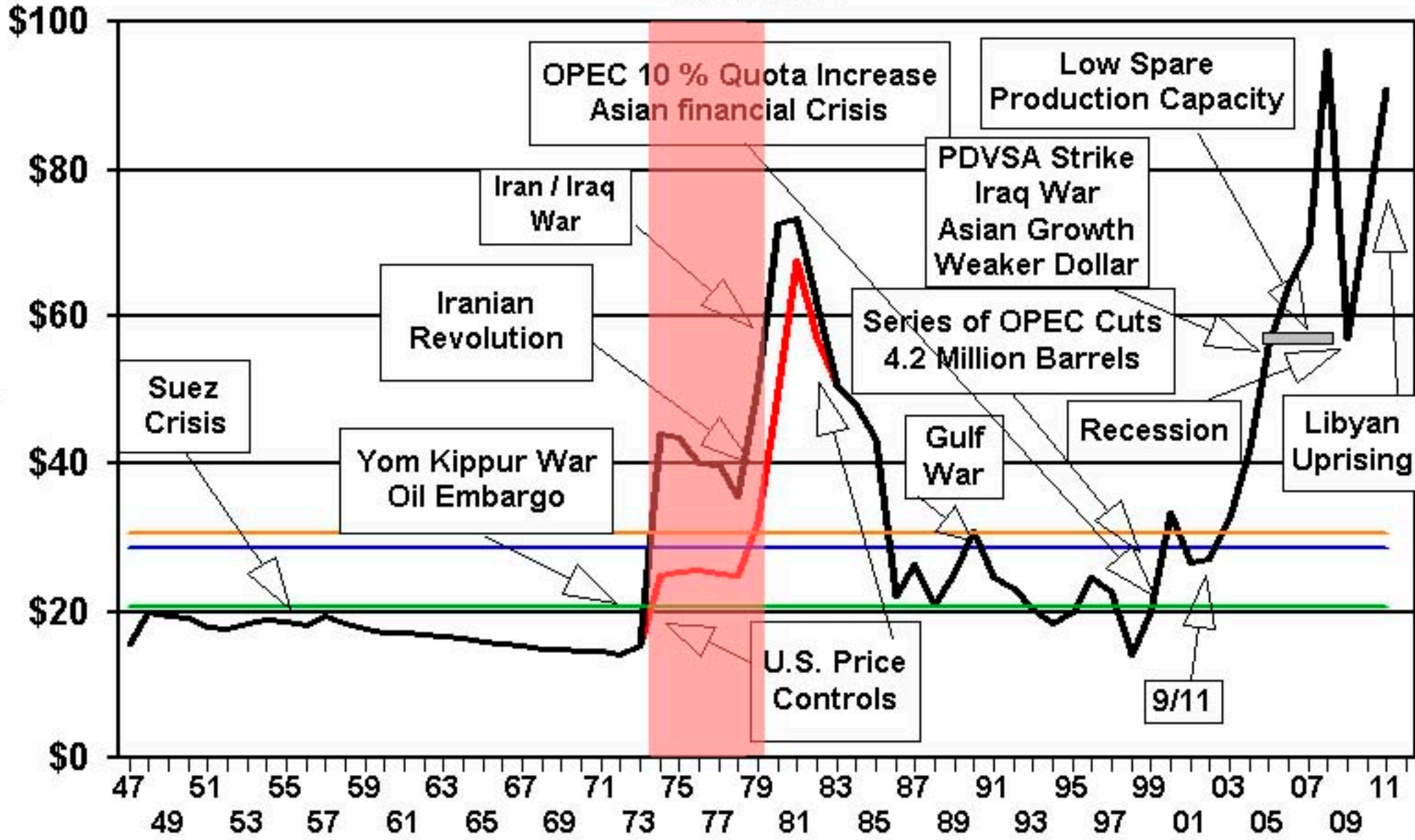




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MAX PRESSURE AREA
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Crude Oil Prices 2010 Dollars



1947 - October 2011 WTRG Economics ©1998-2011

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— Avg U.S. \$28.52 — Avg World \$30.54 — Median U.S. & World \$20.53 fernando.valderrama@presto.es
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2

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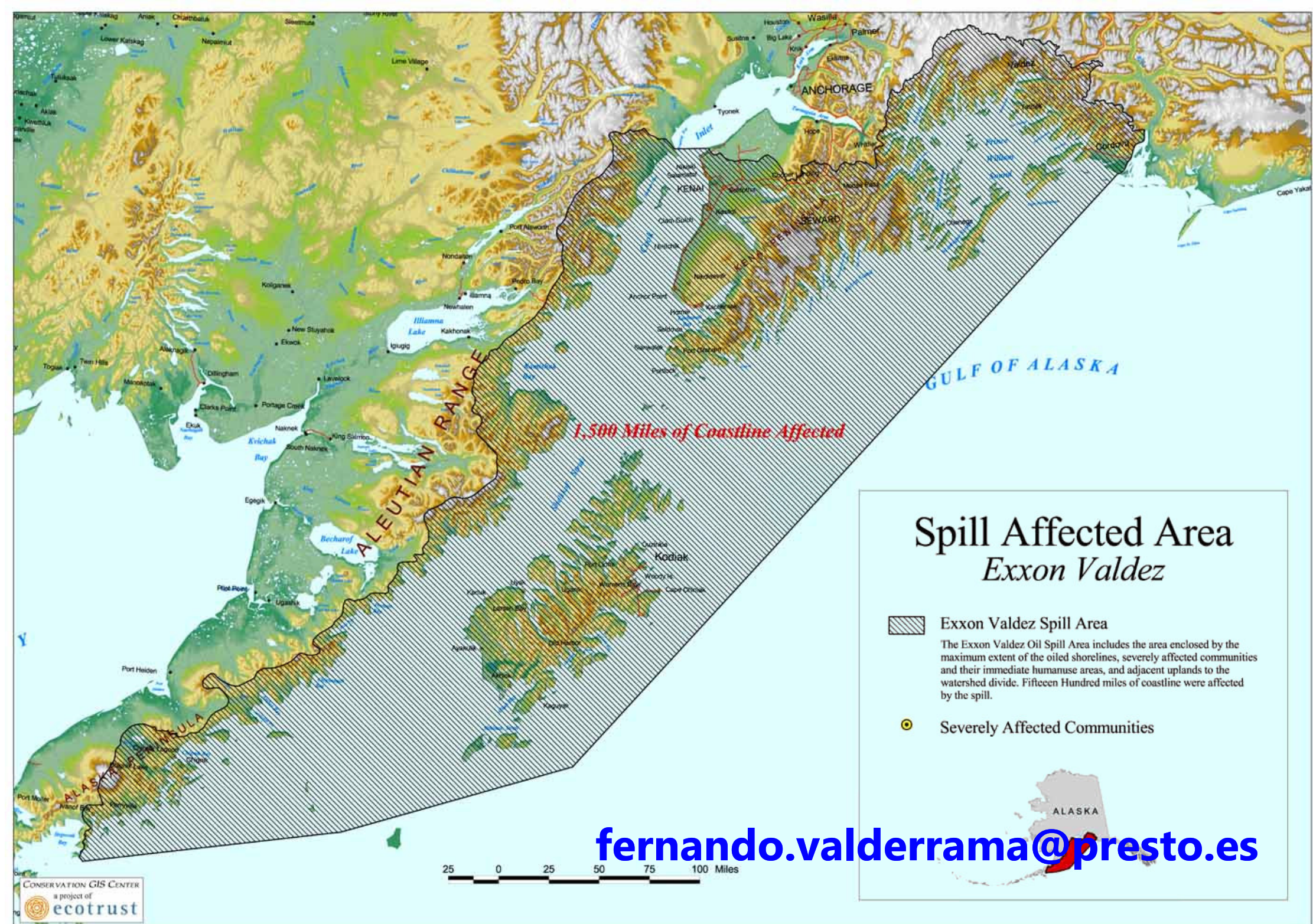
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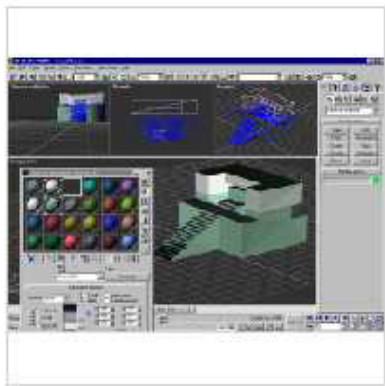
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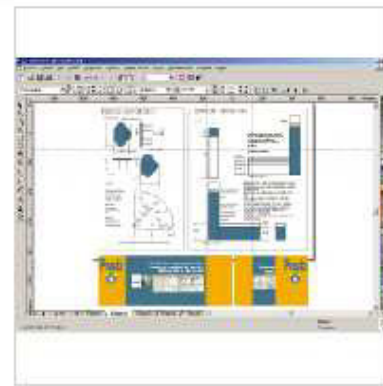
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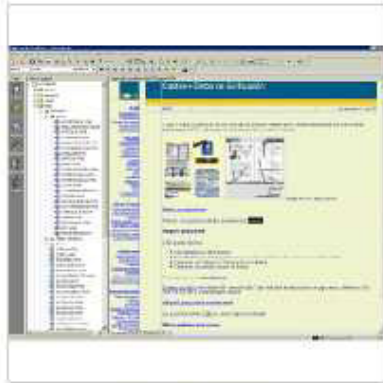
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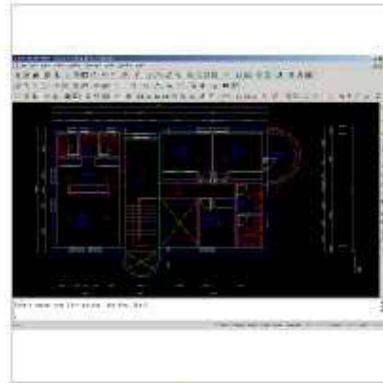
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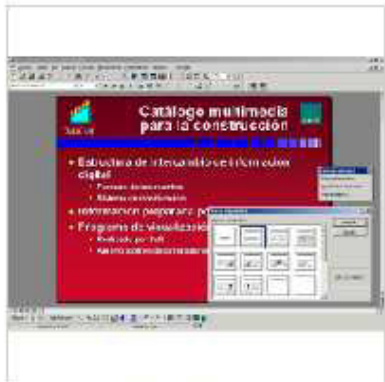
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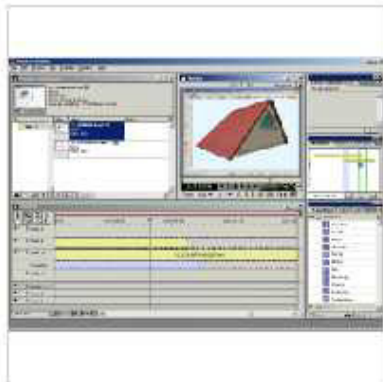
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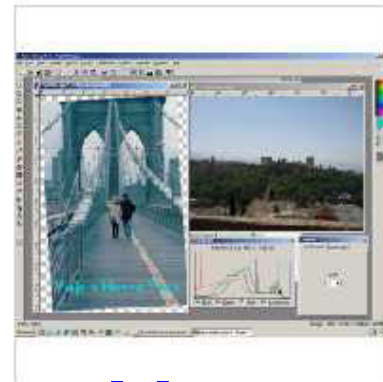
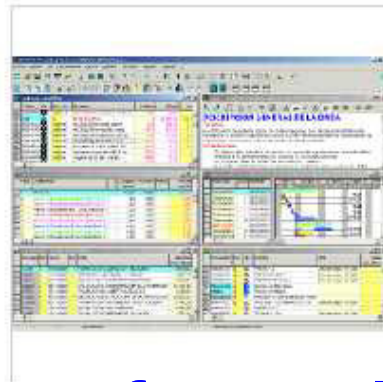
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Modelo Layout1 Layout2

Ventana de comando

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Presupuesto

Nivel 1 Modificados Fase 8

Vivienda unifamiliar en Pozuelo > Acondicionamiento del terreno
> Cimentaciones

| | Código | Nal | Info | Ud | Resumen | PresIni | PresMod | Pres | PresPte |
|-----|-------------|-----|------|----|--|------------|----------|------------|---------|
| 1/1 | - CENZANO | | | | Vivienda unifamiliar en Pozuelo | 153.442,20 | 1.267,74 | 154.709,94 | 61,88 |
| 2/2 | + E02 | | | | Acondicionamiento del terreno | 3.404,22 | 1.267,74 | 4.671,96 | 61,88 |
| 3/2 | - E03 | | | | Red de saneamiento | 2.604,80 | | 2.604,80 | |
| 4/3 | + E03ALR040 | | | ud | Arqueta ladri.registro 51x51x65 cm. | 70,43 | 70,43 | 70,43 | 70,43 |
| 5/3 | + E03ZLR010 | | | ud | Pozo ladri.registro d=80cm. h=1,00m. | 171,76 | 171,76 | 171,76 | 171,76 |
| 6/3 | + E03OEP140 | | | m. | Tubo pvc comp. j.elás.sn4 c.teja 200mm | 23,06 | 23,06 | 23,06 | 23,06 |
| 7/3 | + E03M010 | | | ud | Acometida red gral.saneamiento | 554,22 | 554,22 | 554,22 | 554,22 |

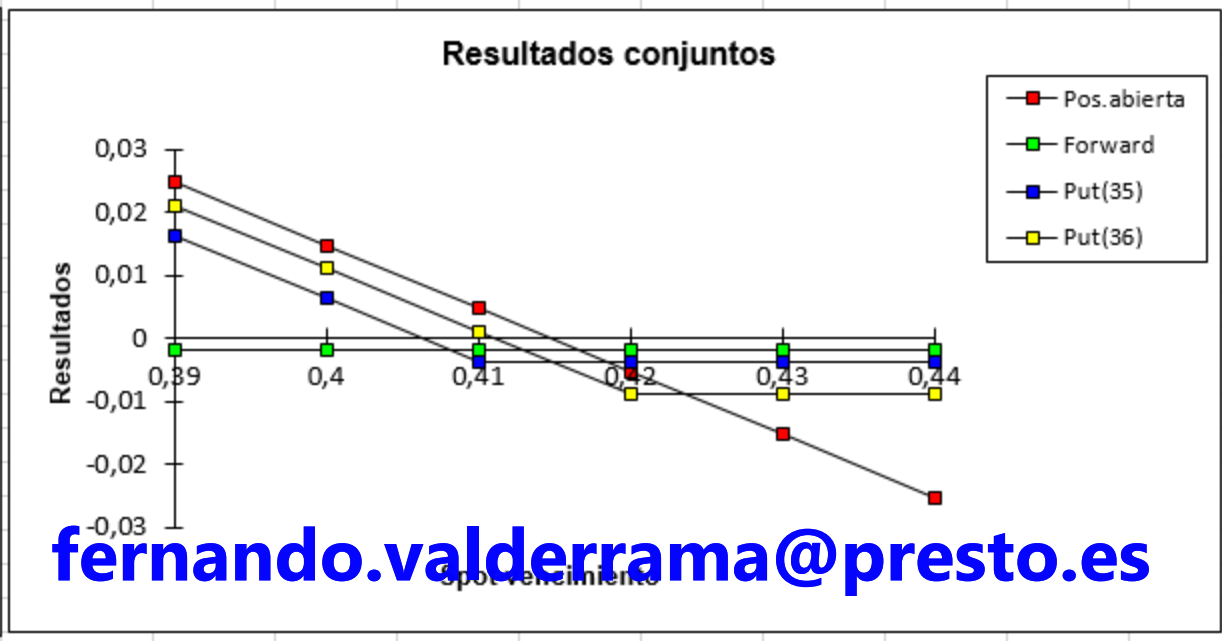
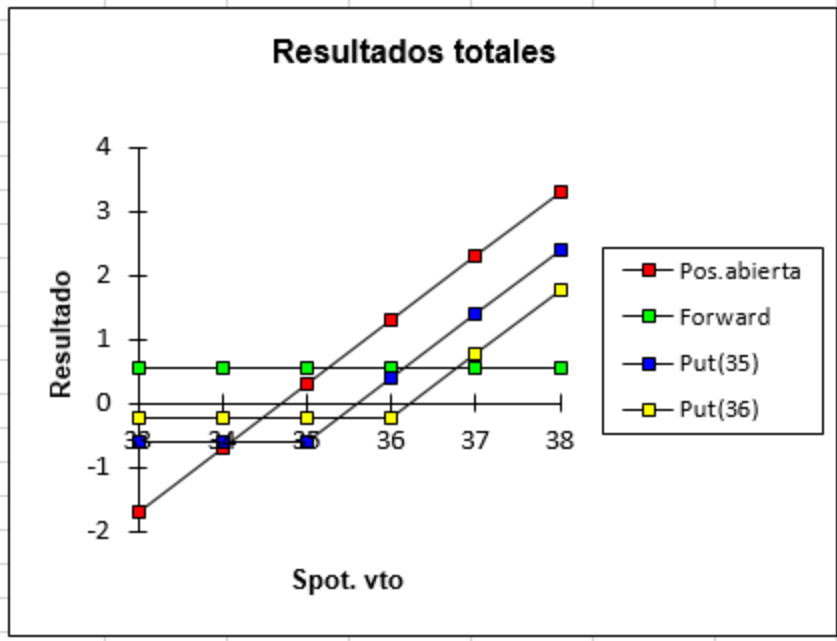
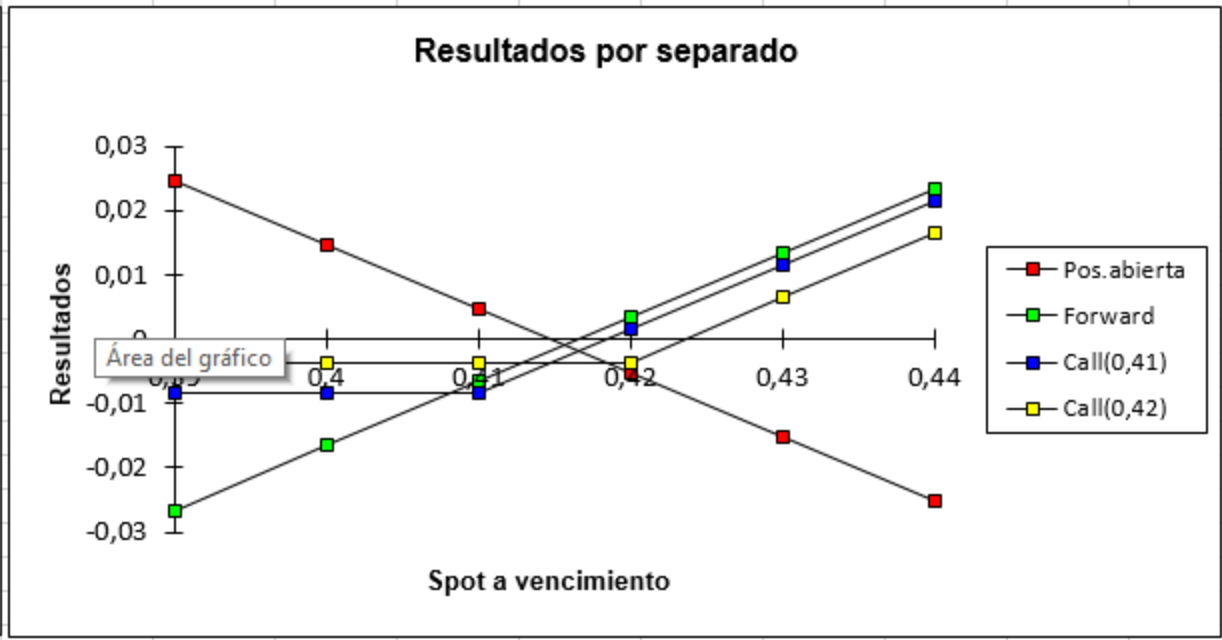
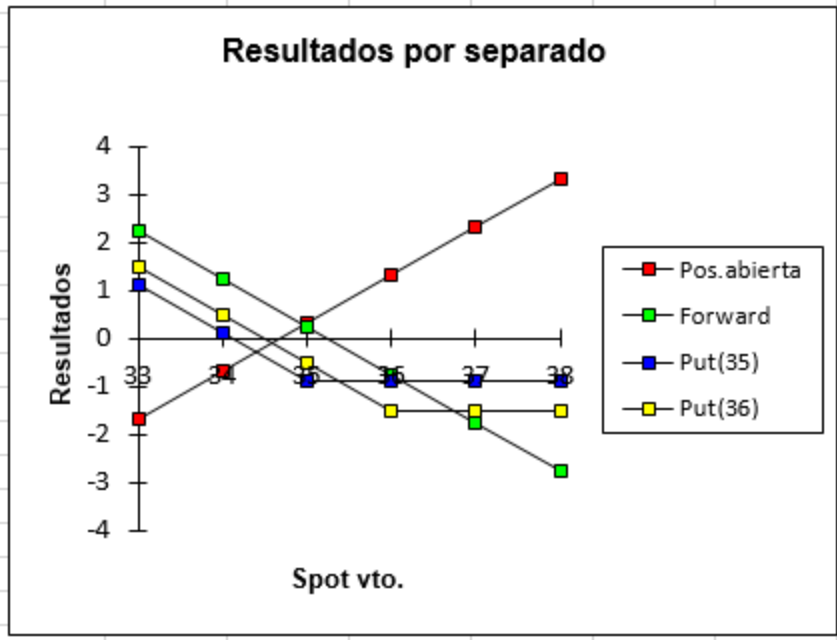
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Certificación

| | FechaDMA | NatC | Info | Resumen | Cert [76.761,39] | Acreditado [123.751,61] | Kt | Revisión | Num | Líquido [123.751,61] |
|----|-----------|------|------|--------------------------------|---------------------|----------------------------|----|----------|-----|-------------------------|
| 1 | 31-May-08 | S | | Certificación: Mayo 2008 | 15.074,52 | 16.799,54 | 1 | 0 | | 16.799,54 |
| 2 | 30-Jun-08 | L | | Certificación: Junio 2008 | 10.399,27 | 11.589,29 | 1 | 0 | | 11.589,29 |
| 3 | 31-Jul-08 | J | | Certificación: Julio 2008 | 18.469,22 | 20.582,70 | 1 | 0 | | 20.582,70 |
| 4 | 31-Ago-08 | D | | Certificación: Agosto 2008 | 7.863,96 | 8.763,85 | 1 | 0 | | 8.763,85 |
| 5 | 30-Sep-08 | M | | Certificación: Septiembre 2008 | 9.797,40 | 10.918,54 | 1 | 0 | | 10.918,54 |
| 6 | 31-Oct-08 | V | | Certificación: Octubre 2008 | 15.157,02 | 16.891,48 | 1 | 0 | | 16.891,48 |
| 7 | 30-Nov-08 | D | | Certificación: Noviembre 2008 | 6.412,65 | 7.169,51 | 1 | 0 | | 7.169,51 |
| 8 | 31-Dic-08 | X | | Certificación: Diciembre 2008 | 5.666,00 | 6.314,37 | 1 | 0 | | 6.314,37 |
| 9 | 31-Ene-09 | S | | Certificación: Enero 2009 | 19.204,79 | 21.402,44 | 1 | 0 | | 21.402,44 |
| 10 | 28-Feb-09 | S | | Certificación: Febrero 2009 | | 0 | 1 | 0 | | 0 |

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| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
|---|-------------|-------|-------|-------|-------|-------|-------|-------------|---------|---------|---------|---------|---------|---------|---|---|---|
| 1 | Spot vto. | 33 | 34 | 35 | 36 | 37 | 38 | Spot vto. | 0,39 | 0,4 | 0,41 | 0,42 | 0,43 | 0,44 | | | |
| 2 | Pos.abierta | -1,7 | -0,7 | 0,3 | 1,3 | 2,3 | 3,3 | Pos.abierta | 0,0247 | 0,0147 | 0,0047 | -0,0053 | -0,0153 | -0,0253 | | | |
| 3 | Forward | 2,25 | 1,25 | 0,25 | -0,75 | -1,75 | -2,75 | Forward | -0,0266 | -0,0166 | -0,0066 | 0,0034 | 0,0134 | 0,0234 | | | |
| 4 | Put(35) | 1,09 | 0,09 | -0,91 | -0,91 | -0,91 | -0,91 | Call(0,41) | -0,0085 | -0,0085 | -0,0085 | 0,0015 | 0,0115 | 0,0215 | | | |
| 5 | Put(36) | 1,46 | 0,46 | -0,54 | -1,54 | -1,54 | -1,54 | Call(0,42) | -0,0036 | -0,0036 | -0,0036 | -0,0036 | 0,0064 | 0,0164 | | | |
| 6 | Forward | 0,55 | 0,55 | 0,55 | 0,55 | 0,55 | 0,55 | Forward | -0,0019 | -0,0019 | -0,0019 | -0,0019 | -0,0019 | -0,0019 | | | |
| 7 | Put(35) | -0,61 | -0,61 | -0,61 | 0,39 | 1,39 | 2,39 | Put(35) | 0,0162 | 0,0062 | -0,0038 | -0,0038 | -0,0038 | -0,0038 | | | |
| 8 | Put(36) | -0,24 | -0,24 | -0,24 | -0,24 | 0,76 | 1,76 | Put(36) | 0,0211 | 0,0111 | 0,0011 | -0,0089 | -0,0089 | -0,0089 | | | |



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The Rise and Fall

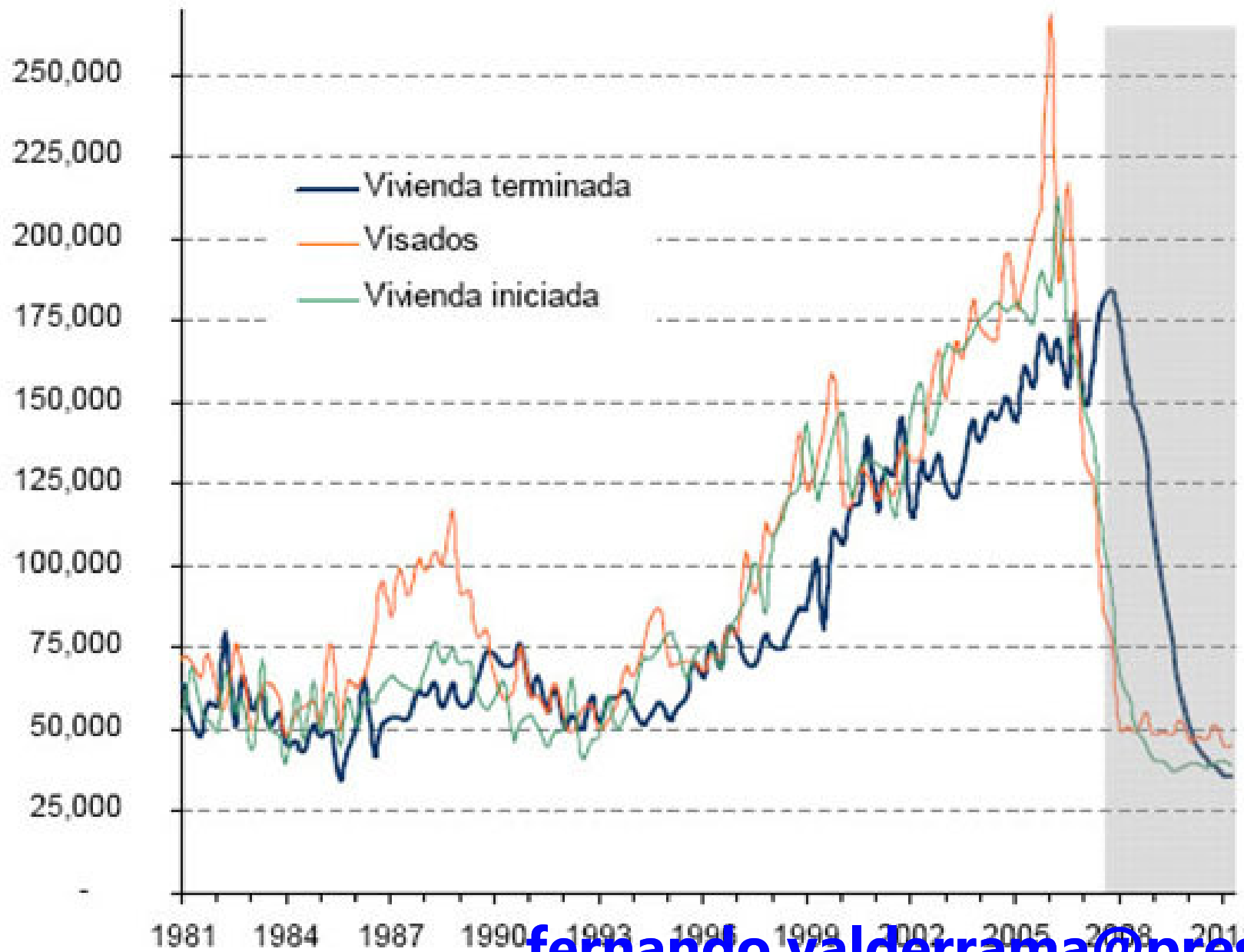
The Nasdaq Composite Index, daily close



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Fuente: SEE BBVA con datos Ministerio de Vivienda, Ministerio de Fomento.

Dejad que florezcan mil DIN-A4

¿Hay vida más allá del proyecto?

- El mito del arquitecto dibujante
- El mito del arquitecto digital
- El mito del arquitecto arquitecto

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