



Connecting to Energy



Dashboard story
Built environment challenges
Cultural trends
2 principles
Questions





VIACOM

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Bank of America  **Higher Standards**



8 offices

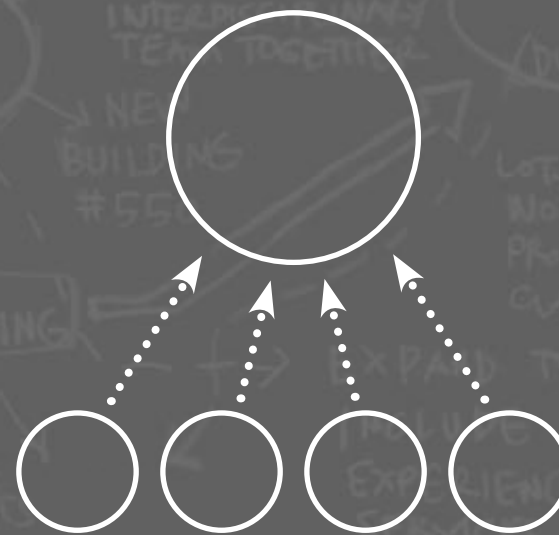
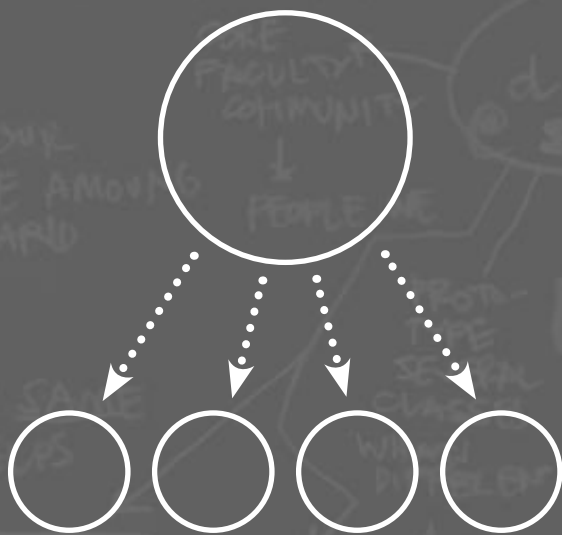
500+ designers

5000+ projects



**Analytical
Thinking**

**Design
Thinking**



The smartest part of smart buildings

=



But first...



245



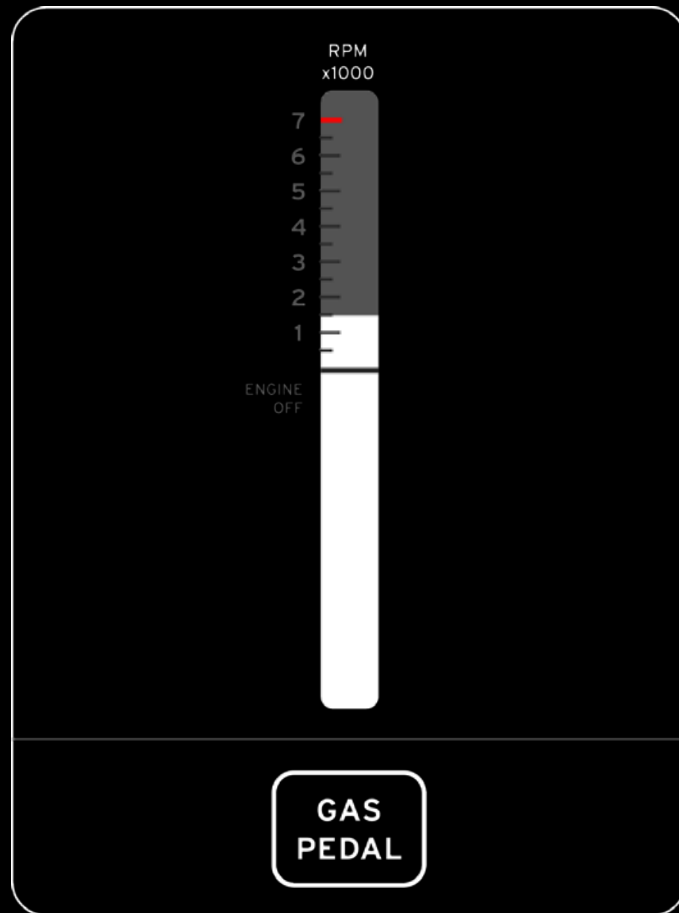


23

CMZ-97R



Hybrid tachometer



H
C
15678.6mi
Trip A
8.5mi



mpg: 33.1 avg

miles to E: 230

This section displays the average miles per gallon (mpg: 33.1 avg) and the remaining range in miles to the next empty tank (miles to E: 230). It is decorated with a green leaf graphic.



2010
MOTOR TREND
CAR OF THE YEAR

#2 Car in the U.S.

**Growth for Ford despite downturn
1445 miles on one tank - a record for a
production hybrid vehicle**

“I managed, without much trouble, to get 52 mpg...

...Perhaps the most valuable bit of software is the wet-ware, the stuff between the driver's ears. To that end, the Fusion Hybrid uses a delightful, LCD instrument cluster with modules that coach drivers on how to save fuel.”

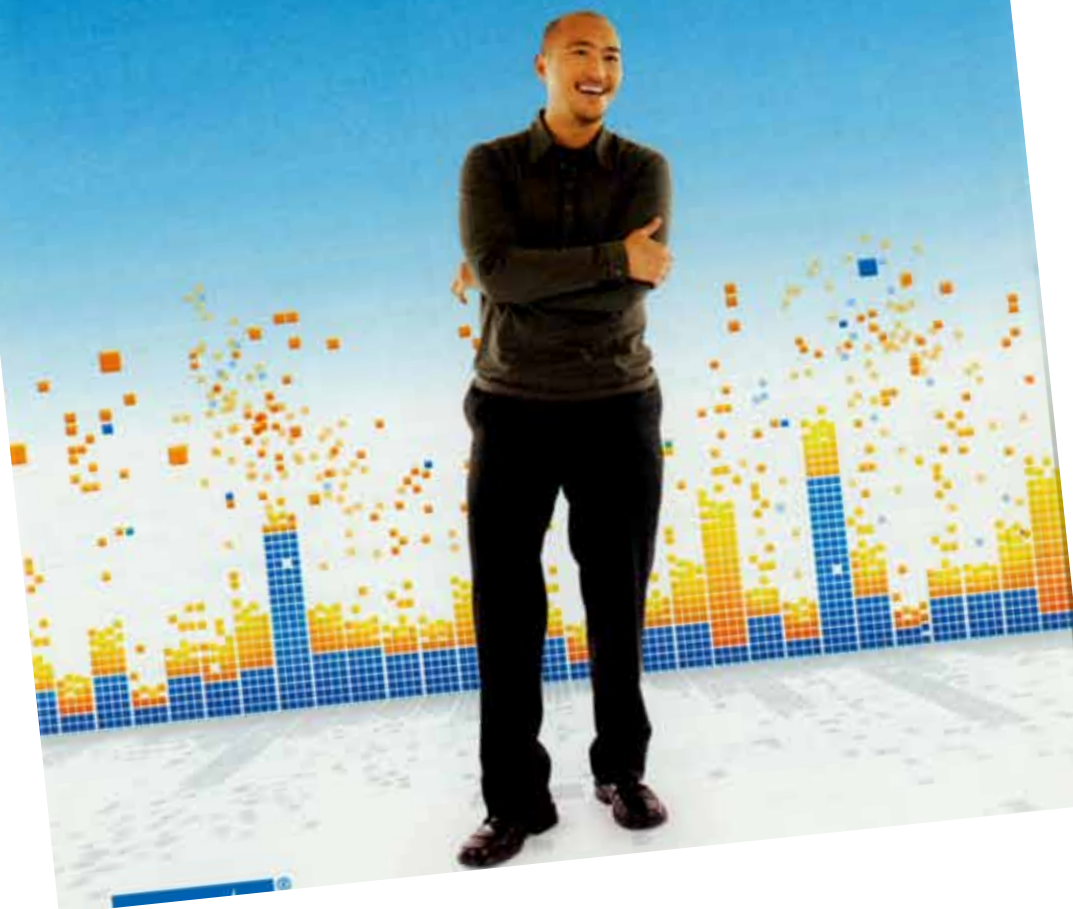
--Dan Neil



**Meanwhile, back in the
built environment...**

Get ready to see your power.

A step-by-step welcome to SmartMeter™ technology.





Yello



GSA



Solar Manufacturers



Tendril

Utilities



DOE

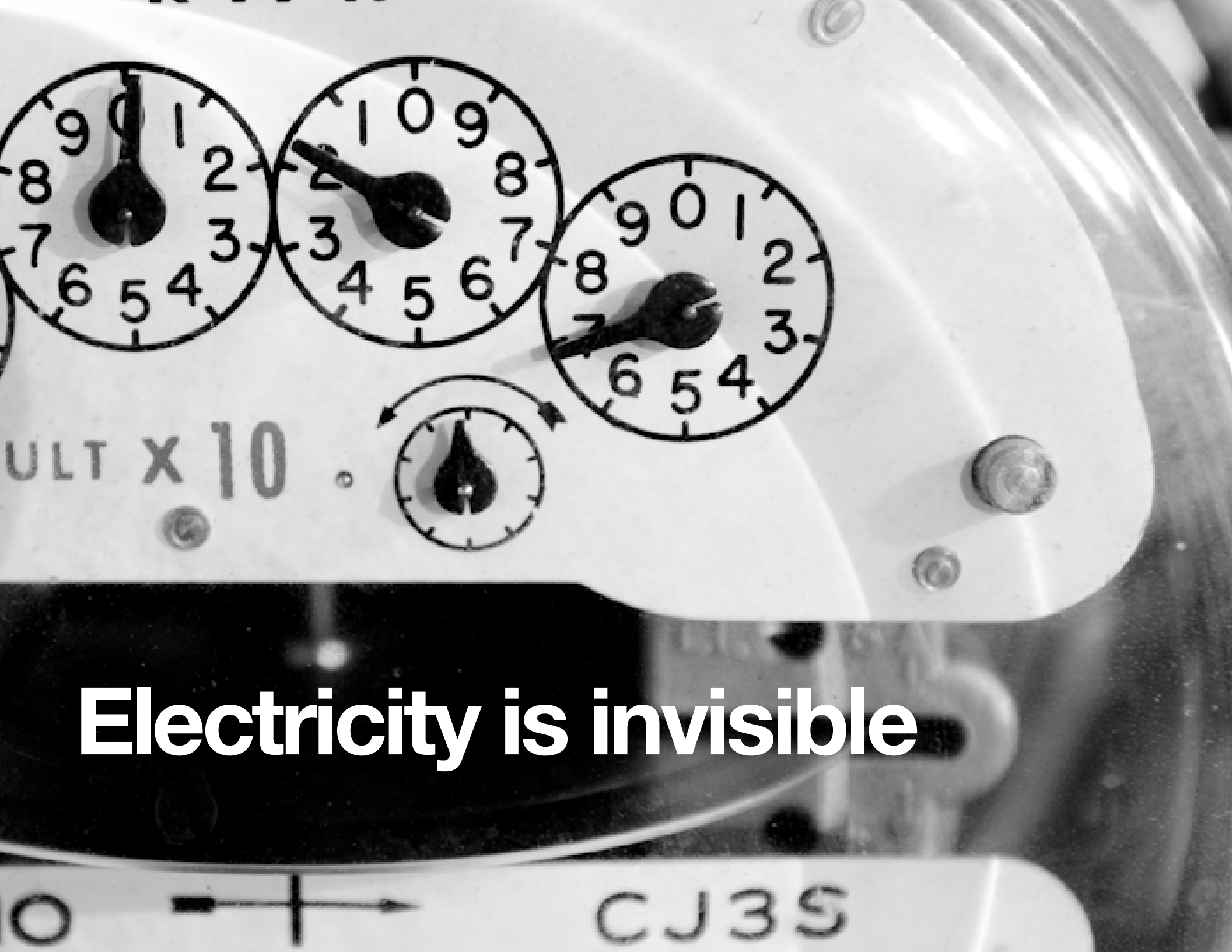
What will the dashboard look like?



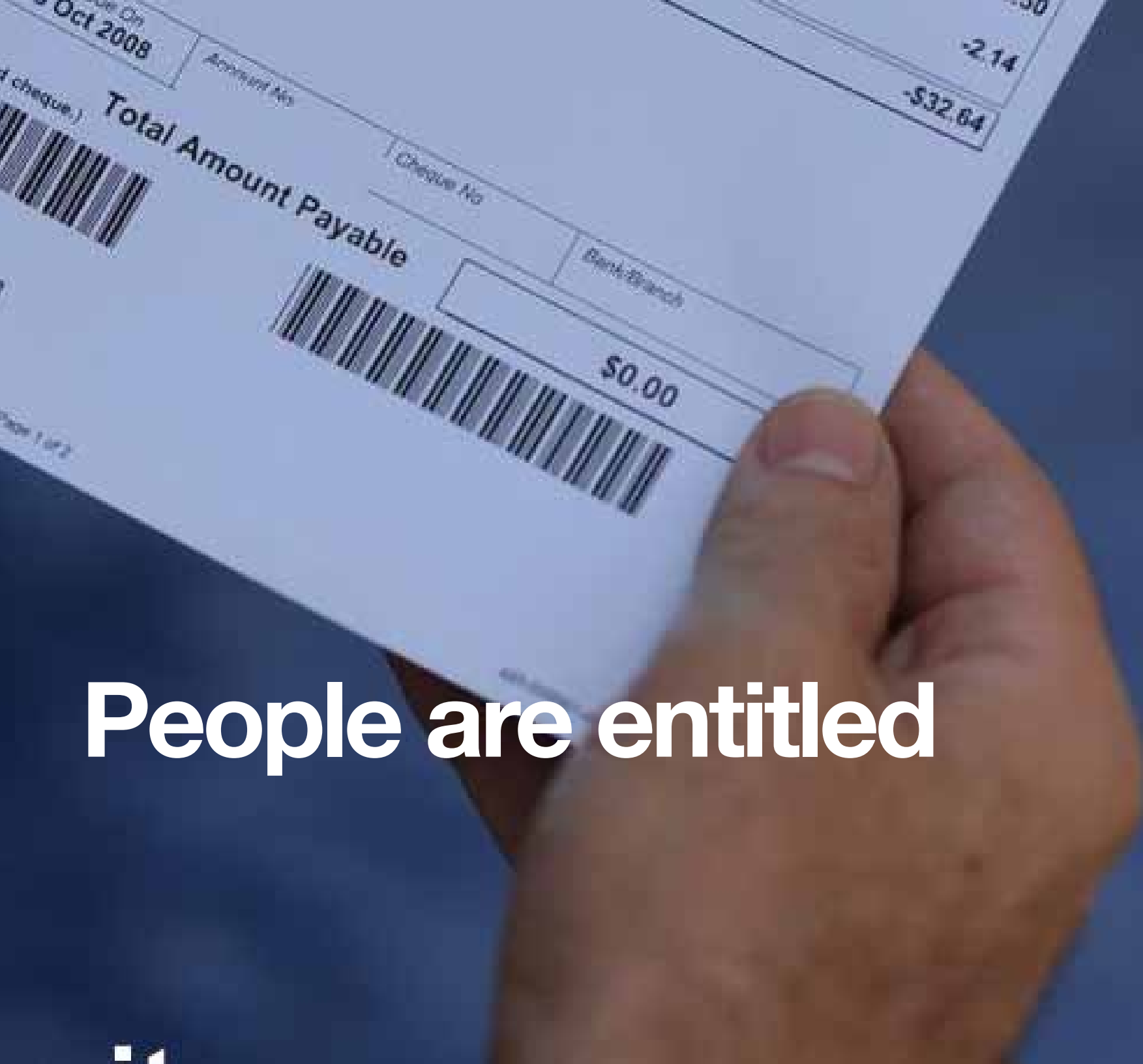




No captive audience



Electricity is invisible



People are entitled

The real challenge:

**How do we make
meaningful connections
between people and
their energy?**

Zoom out

A high-angle, wide shot of a bustling city street, likely Times Square in New York City. The scene is filled with a dense crowd of pedestrians walking on the sidewalks and crossing the street. In the center of the frame, a line of yellow taxis is stopped in traffic, with a blue van in front of them. Large, brightly lit billboards are visible on the buildings lining the street, including one for "Real Ginger Real Tea" and another for "PHANTOM NYC GIFTS". The overall atmosphere is one of intense urban activity and energy.

The context we're operating in

The real challenge:

**How do we make
human connections
between people and
their energy?**

Social Media

facebook

twitter

web 2.0



Do It Yourself

etsy

maker faire

howto





Surplus Revolution

myFarm

Air BnB

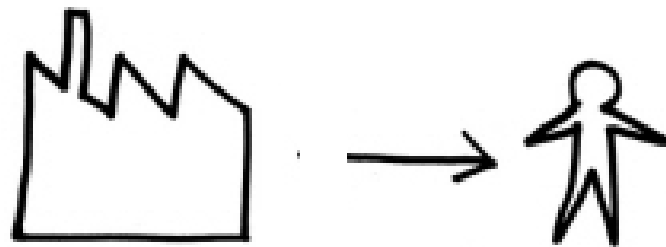
Relay Rides

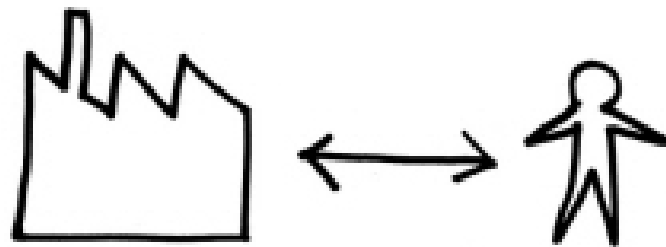
Consumers --> Makers





Participa-
tion





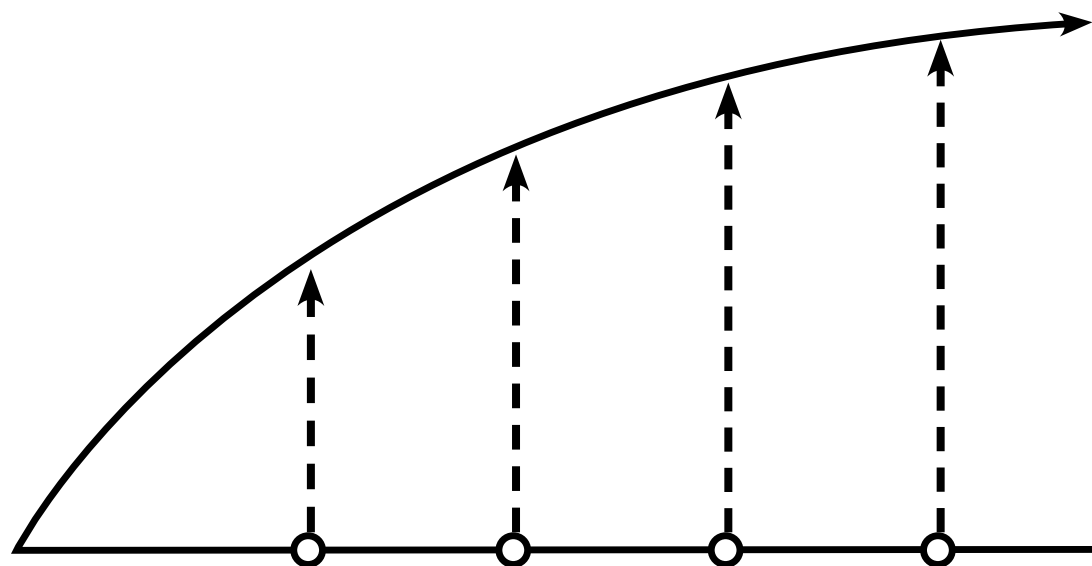
2 principles, 1 case

**1) Design for behaviors
you want to see in the
world**



Bitte absitzen • Asseyez-vous s.v.p.
Prego sedersi • Please sit down





GSA: How do we enable energy efficient behaviors in smart buildings?

movies

(overview) <http://www.youtube.com/watch?v=7RoqZVdCVv8>

<http://www.youtube.com/watch?v=bHnLYs8d044>

8:31 AM

Friday, 04/16/10

DAILY ENERGY



ENERGY PER PERSON



TODAY



68°

CURRENT INDOOR
TEMPERATURE

TOMORROW



SHORT SLEEVES
RECOMMENDED

8:55 AM

Friday, 04/16/10

ENERGY PER PERSON



HIGH
GOAL
LOW

PERSONAL
PROGRAMS
ACTIVATED

TODAY'S EVENTS

6AM-4PM Express elevator

3PM Work from home

ALL DAY Natural ventilation

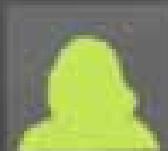
ALL DAY Natus error sit

COMMUNITY



I've been taking the stairs instead of the elevator and I end up saving \$7 a day!

NY



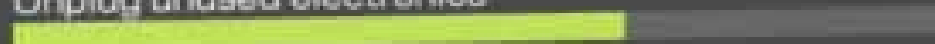
I gave up bottled and canned drinks. On our floor we have water infused with fruit instead.

CA

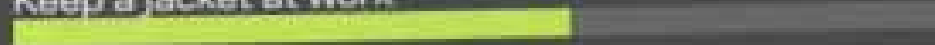
[READ MORE](#)

PERSONAL GOALS

Unplug unused electronics



Keep a jacket at work



Turn off computer every day



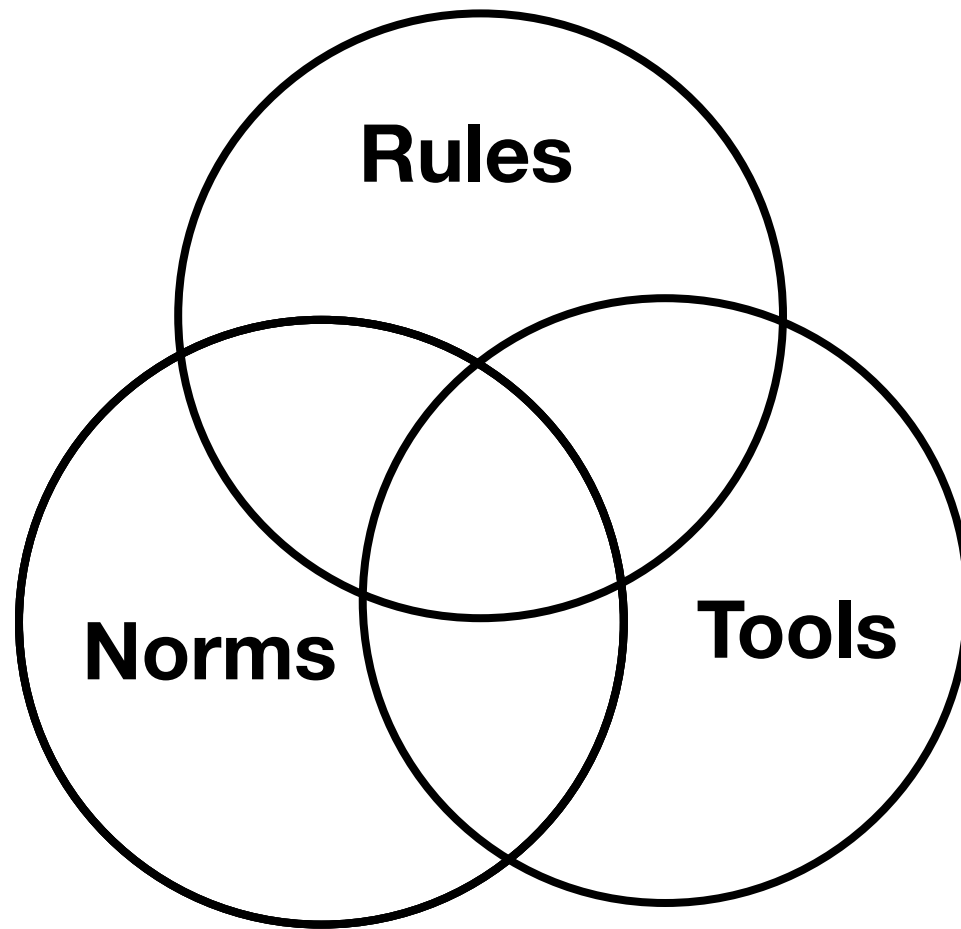
**2) Design the context
for new norms to emerge**

SPEED
LIMIT
55
RADAR
ENFORCED

NO
PARKING
ANY
TIME



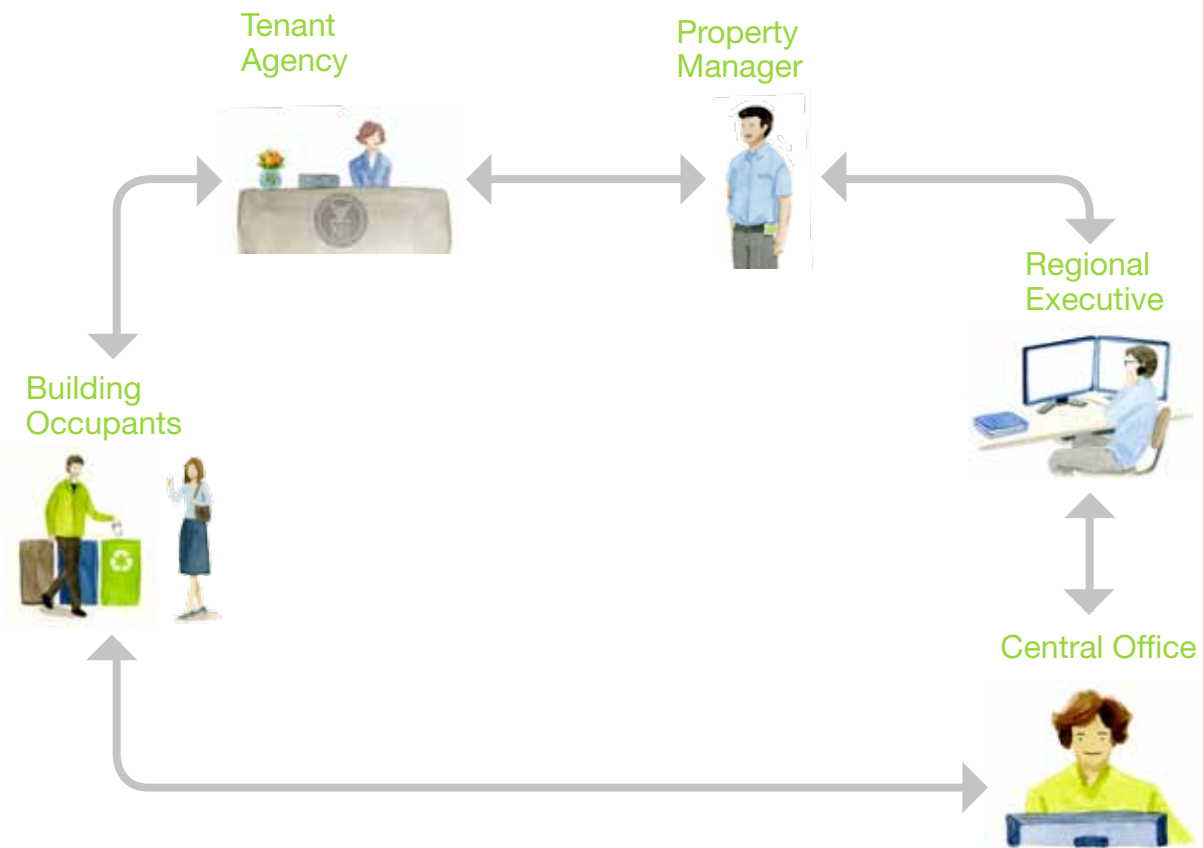




**GSA: How do we help GSA
foster a culture of energy
efficiency in the US gov't?**

movie

http://www.youtube.com/watch?v=sNj5oJFf_bE



YELLOW RBT

SOUTHEAST REGION (4)

158 BUILDINGS

18 PROGRAMS

20 SAVINGS

ENERGY SAVINGS

CERTIFIED NATIONAL PROGRAMS



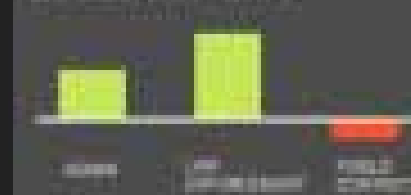
ENERGY FINANCIAL ST



QUALITY SATISFACTION



SAVINGS BY BUILDING TYPE



ANALYZED BUILDING SYSTEMS



158 *Reviews*

1.8 PROBLEMS

38 *Journal of Management Inquiry* 18(1)

BASED

Downloaded from <http://ajphaphysiol.physiology.org/> at University of California, San Diego on June 11, 2015

Abstract

© 2000 Blackwell Science Ltd
Journal of Internal Medicine 247: 103–110

Was This Freedom?

Abstract

© 2000 Blackwell Science Ltd
Journal of Internal Medicine 247: 395–402

Lauren E. Connor

Abstract

© 2000 Blackwell Science Ltd
Journal of Internal Medicine 247: 105–112

Secondary Protein

Abstract

© 2004 Blackwell Publishing Ltd
Journal of Internal Medicine 255: 105–112

1. **Introduction**

Take The Stairs

1. **Introduction**

2010年10月10日 星期六
 2010年10月10日 星期六
 2010年10月10日 星期六
 2010年10月10日 星期六

100

400-1100

Natural Mortar

1000

Program # 1

Abstract

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

Programs #18

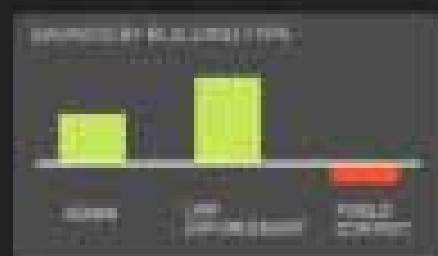
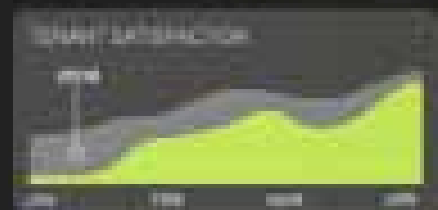
Figure 1

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ENERGY SAVINGS



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YELLOW DOT

SOUTHEAST REGION (4)

158 BUILDINGS

18 PROGRAMS

20 SAVINGS



11

CERTIFIED NATIONAL PROGRAMS

Green Choice

As an independent and non-profit organization, Green Choice is committed to providing the highest quality of service to our members.

Green Choice is a member of the Green Choice Network, which is a national organization of green building professionals.

Program #14

Green Choice

Best description of the program: Green Choice is a member of the Green Choice Network, which is a national organization of green building professionals.

Program #13

Green Choice

Best description of the program: Green Choice is a member of the Green Choice Network, which is a national organization of green building professionals.

Program #12

Green Choice

Best description of the program: Green Choice is a member of the Green Choice Network, which is a national organization of green building professionals.

Program #11

Green Choice

Best description of the program: Green Choice is a member of the Green Choice Network, which is a national organization of green building professionals.

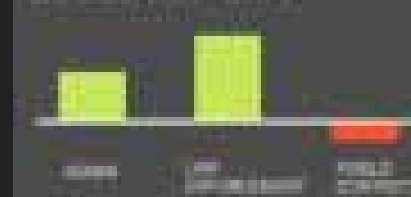
ENERGY CONSUMPTION



QUALITY SATISFACTION



SAVED BY BUILDING TYPE



ANALYZED BUILDING SYSTEMS



Questions



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Shimano movie

coasting
SHIMANO









Questions



Thanks

01

**Forget about the green
consumer**

01

Forget about the green consumer

*** Make green desirable to everyone**