

RESOURCES/REFERENCES

Zillow.com

Trulia.com

Realtor.com

LoopNet Commercial real estate listings

IAAO – International Association of Assessing Officers

North Carolina Department of Revenue – Property Tax Division

Machinery Act of North Carolina

School of Government – UNC Chapel Hill

Marshall Valuation Service

NNN Exchange

Local realtors

Local appraisers

Uniform Standards of Professional Appraisal Practice (USPAP)

USEFUL INFORMATION

Useful Information
Construction Time

CONSTRUCTION TIME

The following table of average periods of constructions lists points on empirical curves, which have been developed from figures for actual construction jobs. The data was adjusted for time lost due to labor shutdowns and extreme cases were discarded. No adjustments were made for holidays, inspection delays, or other minor shutdowns. Figures are the number of contract days from ground breaking to completion of project.

DESIGNED OCCUPANCY	TOTAL COST OF PROJECT (in thousands of dollars)								
	50	100	200	500	1,000	2,000	3,000	5,000	10,000
Clubhouses	90	105	135	185	235	300	345	410	520
Multiple Res.	-----	100	145	200	240	285	310	340	385
Res., single family, townhouses	90	95	125	180	240	315	-----	-----	-----

PERCENT OF COMPLETION

The following is a guideline for estimating percent of completion for a typical Average Quality single family detached residence.:

	Percent of total	Cumulative percent of total
1. Plans, permits and survey	2	2
2. Excavation, forms, water/sewage hookup	4	6
3. Concrete	8	14
4. Rough framing	21	35
5. Windows and exterior doors	2	37
6. Roof cover	3	40
7. Rough-in plumbing	4	44
8. Insulation	1	45
9. Rough-in electrical and mechanical	11	56
10. Exterior cover	6	62
11. Interior drywall and ceiling finish	8	70
12. Built-in cabinets, interior doors, trim, etc.	13	83
13. Plumbing fixtures	5	88
14. Floor covers	3	91
15. Built-in appliances	3	94
16. Light fixtures and finish hardware	2	96
17. Painting and decorating	4	100
TOTAL =	100%	

MECHANICAL AND ELECTRICAL

Percentage of Total Cost

The following table records the results of studies of many completed buildings, by occupancy, giving the percentage of total contract cost spent on the mechanical and electrical items, exclusive of elevators and sprinklers. The average used is the median, and the high and low percentages which are given do not include extremes, but are computed to include approximately 90 percent of all cases within the given range (45% each side of the median).

OCCUPANCY	HEATING ONLY			HEATING & PLUMBING ELECTRICAL COOLING	
	LOW	MEDIAN	HIGH	LOW	HIGH
Clubhouses	3.5	6.0	10.2	8.2	11.9
				5.0	14.0
				7.2	9.3
Multiple Residential	2.6	4.0	7.7	6.6	12.3
				7.5	15.3
				5.3	10.6
Single family residences	2.4	3.9	6.2	6.9	10.8
				8.8	8.6
				4.5	5.3

AIR CONDITIONING REQUIREMENTS

Air conditioning requirements are greatly dependent on the occupancy of the structure. The following figures give typical quantities by occupancy in square feet per ton of cooling capacity, except as otherwise stated. The range of areas includes approximately 80% of all cases.

OCCUPANCY	SQUARE FEET/TON
Residential occupancies	400 - 750
Clubhouses	225 - 400

Computations

Conversion Systems

1 cubic foot = .8036 bushels
1 bushel = 1.2444 cubic feet
1 gallon = .1337 cubic feet = .1074 bushels
1 barrel=31.5 gallons

To calculate a grain bin's bushel capacity according to eave height:

$$\left[\frac{\text{Diameter of Bin}}{2} \right]^2 \times 3.1416 \times .8036 \times \text{Height to Eave.}$$

To calculate the capacity of a grain bin's cone in bushels:

$$1/3 \left[\frac{\text{Diameter of Bin}}{2} \right]^2 \times 3.1416 \times .8036 \times \text{Height of Cone.}$$

ACCOUNTION COMPUTATIONS

MEASUREMENTS

- 1 Link - 7.92 inches
- 1 Rod - 16 1/2 Feet
- 6 3/4 Yards - 25 Links
- 1 Chain - 66 feet - 4 Rods - 100 Links
- 1 Furlong - 660 Feet - 40 Rods
- 1 Mile - 8 Furlongs - 320 Rods - 80 Chains - 6280 Feet
- 1 Square Mile - 1 Section - 640 Acres
- 1 Section - 36 Sections or square miles
- 1 Sq. Rod - 272 1/4 Sq. Feet - 30 1/2 Sq. Yards
- 1 Acre - 43560 Square Feet
- 1 Acre is about 208 1/2 Feet Square
- 1 Acre is 8 Rods x 20 Rods for any two numbers of rods whose product is 160

The Truth-In-Lending law demands that money-lending institutions fully disclose the annual interest rate on loans. The approximate rate can be found by the formula:

$$R = \frac{2NI}{P(n+1)}$$

where N = number of payments per year, I = finance charge in dollars, P = principal, and n = number of scheduled installment payments.

DISTANCE CONVERSIONS

Centi- Meters		Centi- Inches		Feet Meters		Meters Feet		Yards Meters		Meters Yards		Kilo- Miles		Miles Miles	
1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
1	2.54	1	3.937	1	.3048	1	3.281	1	.9144	1	1.094	1	1.609	1	.6214
2	5.08	2	7.874	2	.6096	2	6.562	2	1.828	2	2.188	2	3.218	2	1.243
3	7.62	3	11.81	3	.9144	3	9.843	3	2.743	3	3.282	3	4.828	3	1.864
4	10.16	4	15.75	4	1.219	4	13.12	4	3.658	4	4.376	4	6.437	4	2.466
5	12.70	5	19.69	5	1.524	5	16.40	5	4.572	5	5.470	5	8.047	5	3.107
6	15.24	6	23.62	6	1.829	6	19.69	6	5.466	6	6.564	6	9.656	6	3.748
7	17.78	7	27.56	7	2.133	7	22.97	7	6.401	7	7.658	7	11.27	7	4.350
8	20.32	8	31.50	8	2.438	8	26.25	8	7.315	8	8.752	8	12.87	8	4.952
9	22.86	9	35.43	9	2.743	9	29.53	9	8.230	9	9.846	9	14.48	9	5.552
10	25.40	10	39.37	10	3.048	10	32.81	10	9.144	10	10.94	10	16.09	10	6.214
20	50.80	20	78.74	20	6.096	20	65.62	20	18.29	20	21.88	20	32.18	20	12.43
30	76.20	30	118.1	30	9.144	30	98.43	30	27.43	30	32.82	30	48.28	30	18.64
40	101.6	40	157.5	40	12.19	40	131.2	40	36.58	40	43.76	40	64.37	40	24.86
50	127.0	50	196.9	50	15.24	50	164.0	50	45.72	50	54.70	50	80.47	50	31.07
60	152.4	60	236.2	60	18.29	60	196.9	60	54.66	60	65.64	60	96.56	60	37.28
70	177.8	70	275.6	70	21.33	70	229.7	70	64.01	70	76.58	70	112.7	70	43.50
80	203.2	80	315.0	80	24.38	80	262.5	80	73.15	80	87.52	80	128.7	80	49.71
90	228.6	90	354.3	90	27.43	90	295.3	90	82.30	90	98.46	90	144.8	90	55.92
100	254.0	100	393.7	100	30.48	100	328.1	100	91.44	100	109.4	100	160.9	100	62.14
200	508.0	200	787.4	200	60.96	200	656.2	200	182.9	200	218.8	200	321.8	200	124.3
300	762.0	300	1181	300	91.44	300	984.3	300	274.3	300	328.2	300	482.8	300	186.4
400	1016	400	1575	400	121.9	400	1312	400	365.8	400	437.6	400	643.7	400	248.6
500	1270	500	1969	500	152.4	500	1640	500	457.2	500	547.0	500	804.7	500	310.7
600	1524	600	2362	600	182.9	600	1969	600	546.6	600	656.4	600	965.6	600	372.8
700	1778	700	2756	700	213.3	700	2297	700	640.1	700	765.8	700	1127	700	435.0
800	2032	800	3150	800	243.8	800	2625	800	731.5	800	875.2	800	1287	800	497.1
900	2286	900	3543	900	274.3	900	2953	900	823.0	900	984.6	900	1448	900	559.2
1000	2540	1000	3937	1000	304.8	1000	3281	1000	914.4	1000	1094	1000	1609	1000	621.4

Price Per Acre Produced by Certain Prices Per Square Foot

PRICE PER SQ. FOOT	PRICE PER ACRE				
1	43560	2	87120	3	130680
4	174240	5	217800	6	261360
7	304920	8	349680	9	393240
10	435600	11	477240	12	520800
13	566280	14	609840	15	652400
16	697440	17	730080	18	771720
19	828600	20	871200	21	912840
22	953880	23	1003440	24	1054080
25	1095000	26	1145160	27	1196880
28	1237200	29	1289640	30	1339560
31	1380840	32	1433520	33	1477800
34	1525440	35	1578240	36	1623000
37	1670880	38	1724160	39	1770240
40	1818000	41	1821360	42	1818720
43	1966800	44	1920240	45	1968480
46	2117880	47	2020800	48	2020640
49	2271240	50	2123040	51	2075280
52	2426880	53	2226960	54	2131440
55	2584800	56	2333520	57	2189160
58	2745000	59	2442720	60	2248440
61	2907600	62	2554560	63	2309320
64	3072840	65	2669040	66	2371800
67	3240720	68	2786280	69	2435920
70	3411240	71	2906400	72	2501640
73	3584400	74	3029520	75	2568960
76	3876000	77	3155640	78	2637960
79	4005600	80	3284880	81	2708640
82	4138080	83	3417240	84	2780920
85	4273320	86	3553640	87	2854800
88	4411440	89	3694080	90	2930320
91	4552560	92	3838560	93	3007440
94	4696800	95	3987120	96	3086160
97	4844160	98	4139840	99	3166560
100	4994640	101	4296720	102	3248640
103	5148240	104	4457760	105	3332400
106	5304480	107	4622960	108	3417840
109	5463360	110	4792320	111	3504960
112	5624880	113	4965840	114	3593760
115	5789040	116	5143520	117	3684240
118	5955840	119	5325360	120	3776400
121	6125280	122	5511360	123	3870240
124	6297360	125	5701560	126	3965760
127	6472080	128	5895960	129	4063040
130	6649440	131	6094560	132	4162080
133	6829440	134	6297360	135	4262880
136	7012080	137	6504360	138	4365440
139	7197360	140	6715560	141	4469760
142	7385280	143	6930960	144	4575840
145	7575840	146	7150560	147	4683600
148	7769040	149	7374360	150	4793040
151	7964880	152	7602360	153	4904160
154	8163360	154	7834560	156	5016960
157	8364480	155	8070960	159	5131440
160	8568240	156	8311560	162	5247600
163	8774640	157	8556360	165	5365440
166	8983680	158	8804800	168	5484960
169	9195360	159	9056960	171	5606160
172	9409680	160	9312720	174	5729040
175	9626640	161	9572160	177	5853600
178	9846240	162	9835200	180	5979840
181	10068480	163	10101840	183	6107760
184	10293360	164	10372000	186	6237360
187	10520880	165	10645600	189	6368640
190	10751040	166	10922720	192	6501600
193	10983840	167	11203360	195	6636240
196	11219280	168	11487520	198	6772560
199	11457360	169	11775120	201	6910560
202	11698080	170	12066160	204	7050240
205	11941440	171	12360640	207	7191600
208	12187440	172	12658560	210	7334640
211	12436080	173	12959920	213	7479360
214	12687360	174	13264720	216	7625760
217	12941280	175	13572960	219	7773840
220	13197840	176	13884640	222	7923600
223	13457040	177	14199840	225	8075040
226	13718880	178	14518560	228	8228160
229	13983360	179	14840800	231	8382960
232	14250480	180	15166560	234	8539440
235	14520240	181	15495840	237	8697600
238	14792640	182	15828640	240	8857440
241	15067680	183	16164960	243	9018960
244	15345360	184	16504800	246	9182160
247	15625680	185	16848160	249	9347040
250	15908640	186	17195040	252	9513600
253	16194240	187	17545440	255	9681840
256	16482480	188	17899360	258	9851760
259	16773360	189	18256800	261	10023360
262	17066880	190	18617840	264	10196640
265	17363040	191	18982400	267	10371600
268	17661840	192	19350560	270	10548240
271	17963280	193	19722240	273	10726560
274	18267360	194	20097440	276	10906640
277	18574080	195	20476160	279	11088480
280	18883440	196	20858400	282	11271960
283	19195440	197	21244160	285	11458080
286	19509960	198	21633440	288	11645840
289	19827000	199	22026240	291	11835240
292	20146640	200	22422560	294	12026280
295	20468880	201	22822400	297	12218960
298	20793720	202	23225760	300	12413280
301	21121160	203	23632640	303	12609240
304	21451160	204	24043040	306	12806840
307	21783720	205	24456960	309	13006080
310	22118840	206	24874400	312	13206960
313	22456520	207	25295440	315	13409480
316	22796760	208	25719960	318	13613640
319	23139560	209	26148000	321	13819440
322	23484920	210	26579560	324	14026880
325	23832840	211	27014640	327	14235960
328	24183320	212	27453240	330	14446680
331	24536360	213	27895360	333	