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1.- MATERIALES

1.1.- Hormigones

| Elemento | Hormigón | f_{ck} (kp/cm ²) | γ_c | Árido | |
|----------|----------|-----------------------------------|------------|------------|-----------------------|
| | | | | Naturaleza | Tamaño máximo (mm) |
| Todos | HA-25 | 255 | 1.50 | Cuarcita | 15 |

1.2.- Aceros por elemento y posición

1.2.1.- Aceros en barras

| Elemento | Acero | f_{yk} (kp/cm ²) | γ_s |
|----------|---------|-----------------------------------|------------|
| Todos | B 500 S | 5097 | 1.15 |

1.2.2.- Aceros en perfiles

| Tipo de acero para perfiles | Acero | Límite elástico (kp/cm ²) | Módulo de elasticidad (kp/cm ²) |
|-----------------------------|-------|--|--|
| Acero conformado | S235 | 2396 | 2140673 |
| Acero laminado | S275 | 2803 | 2140673 |



2.- ARMADO DE PILARES Y PANTALLAS



2.1.- Pilares

| Armado de pilares | | | | | | | | | | |
|-------------------------|-------------|------------------|-----------|-----------|--------|-------------|------------|-----------------|------------|--------|
| Hormigón: HA-25, Yc=1.5 | | | | | | | | | | |
| Pilar | Geometría | | | Armaduras | | | | | Aprov. (%) | Estado |
| | Planta | Dimensiones (cm) | Tramo (m) | Barras | | | Estribos | | | |
| | | | | Esquina | Cara Y | Cuantía (%) | Perimetral | Separación (cm) | | |
| P1 | Planta 1 | 30x50 | 0.00/3.40 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 60.2 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 60.2 | Cumple |
| P2 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 55.4 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 55.4 | Cumple |
| P3 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 65.8 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 65.8 | Cumple |
| P4 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 61.6 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 61.6 | Cumple |
| P5 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 51.9 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 50.8 | Cumple |
| P6 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 53.3 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 53.3 | Cumple |
| P7 | Planta 1 | 30x50 | 0.00/3.40 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 63.1 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 63.1 | Cumple |
| P8 | Planta 1 | 30x50 | 0.00/3.40 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 33.1 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 33.1 | Cumple |
| P9 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 46.8 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 46.8 | Cumple |
| P10 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 54.3 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 54.3 | Cumple |
| P11 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 57.6 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 57.6 | Cumple |
| P12 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 44.1 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 44.1 | Cumple |
| P13 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 47.3 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 47.3 | Cumple |
| P14 | Planta 1 | 30x50 | 0.00/3.40 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 33.9 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 33.9 | Cumple |
| P15 | Planta 1 | 30x50 | 0.00/3.40 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 60.7 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 60.7 | Cumple |
| P16 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 55.5 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 55.5 | Cumple |
| P17 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 55.9 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 55.9 | Cumple |
| P18 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 56.9 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 56.9 | Cumple |
| P19 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 49.9 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 49.5 | Cumple |
| P20 | Planta 1 | 30x50 | 0.00/3.30 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 53.1 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 53.1 | Cumple |
| P21 | Planta 1 | 30x50 | 0.00/3.40 | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | 15 | 62.6 | Cumple |
| | Planta baja | - | - | 4Ø16 | 2Ø16 | 0.80 | 1eØ8 | - | 62.6 | Cumple |



3.- ESFUERZOS DE PILARES, PANTALLAS Y MUROS POR HIPÓTESIS

▪ Tramo: Nivel inicial / nivel final del tramo entre plantas.

▪ Nota:

Los esfuerzos están referidos a ejes locales del pilar.

| Soporte | Planta | Dimensión (cm) | Tramo (m) | Hipótesis | Base | | | | | | Cabeza | | | | | |
|---------|----------|----------------|-----------|---------------------|-------|----------|----------|--------|--------|---------|--------|----------|----------|--------|--------|---------|
| | | | | | N (t) | Mx (t-m) | My (t-m) | Qx (t) | Qy (t) | T (t-m) | N (t) | Mx (t-m) | My (t-m) | Qx (t) | Qy (t) | T (t-m) |
| P1 | Planta 1 | 30x50 | 0.00/3.40 | Peso propio | 17.80 | 0.32 | 2.10 | 0.24 | 1.35 | 0.00 | 16.52 | -0.48 | -2.49 | 0.24 | 1.35 | 0.00 |
| | | | | Cargas muertas | 7.67 | 1.04 | 1.62 | 0.68 | 1.07 | 0.00 | 7.67 | -1.26 | -2.03 | 0.68 | 1.07 | 0.00 |
| | | | | Sobrecarga (Uso C) | 5.03 | 0.17 | 1.83 | 0.14 | 1.16 | -0.00 | 5.03 | -0.30 | -2.12 | 0.14 | 1.16 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 15.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | 15.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.00 |
| | | | | Viento +X exc. + | -0.18 | -1.03 | -0.10 | -0.39 | -0.04 | 0.00 | -0.18 | 0.31 | 0.03 | -0.39 | -0.04 | 0.00 |
| | | | | Viento +X exc. - | -0.16 | -1.05 | 0.08 | -0.40 | 0.03 | -0.00 | -0.16 | 0.32 | -0.03 | -0.40 | 0.03 | -0.00 |
| | | | | Viento -X exc. + | 0.18 | 1.03 | 0.10 | 0.39 | 0.04 | -0.00 | 0.18 | -0.31 | -0.03 | 0.39 | 0.04 | -0.00 |
| | | | | Viento -X exc. - | 0.16 | 1.05 | -0.08 | 0.40 | -0.03 | 0.00 | 0.16 | -0.32 | 0.03 | 0.40 | -0.03 | 0.00 |
| | | | | Viento +Y exc. + | -0.22 | -0.07 | -1.77 | -0.03 | -0.69 | -0.00 | -0.22 | 0.02 | 0.59 | -0.03 | -0.69 | -0.00 |
| | | | | Viento +Y exc. - | -0.31 | 0.07 | -2.71 | 0.03 | -1.06 | 0.00 | -0.31 | -0.02 | 0.90 | 0.03 | -1.06 | 0.00 |
| | | | | Viento -Y exc. + | 0.22 | 0.07 | 1.77 | 0.03 | 0.69 | 0.00 | 0.22 | -0.02 | -0.59 | 0.03 | 0.69 | 0.00 |
| | | | | Viento -Y exc. - | 0.31 | -0.07 | 2.71 | -0.03 | 1.06 | -0.00 | 0.31 | 0.02 | -0.90 | -0.03 | 1.06 | -0.00 |
| P2 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 24.81 | -0.28 | 2.79 | -0.15 | 1.79 | 0.00 | 23.58 | 0.22 | -3.12 | -0.15 | 1.79 | 0.00 |
| | | | | Cargas muertas | 9.51 | -0.35 | 0.59 | -0.22 | 0.41 | 0.00 | 9.51 | 0.36 | -0.74 | -0.22 | 0.41 | 0.00 |
| | | | | Sobrecarga (Uso C) | 11.22 | -0.20 | 2.55 | -0.10 | 1.62 | -0.00 | 11.22 | 0.13 | -2.80 | -0.10 | 1.62 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.98 | -0.00 | -0.03 | -0.00 | -0.02 | -0.00 | 14.98 | 0.00 | 0.03 | -0.00 | -0.02 | -0.00 |
| | | | | Viento +X exc. + | 0.06 | -1.17 | -0.08 | -0.49 | -0.03 | 0.00 | 0.06 | 0.44 | 0.03 | -0.49 | -0.03 | 0.00 |
| | | | | Viento +X exc. - | 0.08 | -1.20 | 0.06 | -0.50 | 0.02 | -0.00 | 0.08 | 0.45 | -0.02 | -0.50 | 0.02 | -0.00 |
| | | | | Viento -X exc. + | -0.06 | 1.17 | 0.08 | 0.49 | 0.03 | -0.00 | -0.06 | -0.44 | -0.03 | 0.49 | 0.03 | -0.00 |
| | | | | Viento -X exc. - | -0.08 | 1.20 | -0.06 | 0.50 | -0.02 | 0.00 | -0.08 | -0.45 | 0.02 | 0.50 | -0.02 | 0.00 |
| | | | | Viento +Y exc. + | -0.27 | -0.08 | -2.12 | -0.03 | -0.89 | -0.00 | -0.27 | 0.03 | 0.81 | -0.03 | -0.89 | -0.00 |
| | | | | Viento +Y exc. - | -0.37 | 0.08 | -2.84 | 0.04 | -1.19 | 0.00 | -0.37 | -0.03 | 1.08 | 0.04 | -1.19 | 0.00 |
| | | | | Viento -Y exc. + | 0.27 | 0.08 | 2.12 | 0.03 | 0.89 | 0.00 | 0.27 | -0.03 | -0.81 | 0.03 | 0.89 | 0.00 |
| | | | | Viento -Y exc. - | 0.37 | -0.08 | 2.84 | -0.04 | 1.19 | -0.00 | 0.37 | 0.03 | -1.08 | -0.04 | 1.19 | -0.00 |
| P3 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 28.08 | 0.33 | 3.23 | 0.24 | 2.07 | 0.00 | 26.84 | -0.46 | -3.61 | 0.24 | 2.07 | 0.00 |
| | | | | Cargas muertas | 17.29 | 0.94 | 1.99 | 0.61 | 1.30 | 0.00 | 17.29 | -1.07 | -2.30 | 0.61 | 1.30 | 0.00 |
| | | | | Sobrecarga (Uso C) | 11.05 | 0.07 | 2.31 | 0.07 | 1.47 | -0.00 | 11.05 | -0.16 | -2.53 | 0.07 | 1.47 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.97 | 0.00 | -0.03 | 0.00 | -0.02 | -0.00 | 14.97 | -0.00 | 0.04 | 0.00 | -0.02 | -0.00 |
| | | | | Viento +X exc. + | -0.07 | -1.27 | -0.03 | -0.55 | -0.01 | 0.00 | -0.07 | 0.55 | 0.01 | -0.55 | -0.01 | 0.00 |
| | | | | Viento +X exc. - | -0.07 | -1.30 | 0.04 | -0.57 | 0.02 | -0.00 | -0.07 | 0.56 | -0.02 | -0.57 | 0.02 | -0.00 |
| | | | | Viento -X exc. + | 0.07 | 1.27 | 0.03 | 0.55 | 0.01 | -0.00 | 0.07 | -0.55 | -0.01 | 0.55 | 0.01 | -0.00 |
| | | | | Viento -X exc. - | 0.07 | 1.30 | -0.04 | 0.57 | -0.02 | 0.00 | 0.07 | -0.56 | 0.02 | 0.57 | -0.02 | 0.00 |
| | | | | Viento +Y exc. + | -0.32 | -0.08 | -2.31 | -0.03 | -0.98 | -0.00 | -0.32 | 0.03 | 0.91 | -0.03 | -0.98 | -0.00 |
| | | | | Viento +Y exc. - | -0.36 | 0.09 | -2.70 | 0.04 | -1.14 | 0.00 | -0.36 | -0.04 | 1.06 | 0.04 | -1.14 | 0.00 |
| | | | | Viento -Y exc. + | 0.32 | 0.08 | 2.31 | 0.03 | 0.98 | 0.00 | 0.32 | -0.03 | -0.91 | 0.03 | 0.98 | 0.00 |
| | | | | Viento -Y exc. - | 0.36 | -0.09 | 2.70 | -0.04 | 1.14 | -0.00 | 0.36 | 0.04 | -1.06 | -0.04 | 1.14 | -0.00 |
| P4 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 24.07 | -0.47 | 2.51 | -0.27 | 1.61 | 0.00 | 22.84 | 0.43 | -2.79 | -0.27 | 1.61 | 0.00 |
| | | | | Cargas muertas | 21.83 | -1.31 | 1.87 | -0.83 | 1.21 | 0.00 | 21.83 | 1.44 | -2.14 | -0.83 | 1.21 | 0.00 |
| | | | | Sobrecarga (Uso C) | 8.17 | -0.22 | 1.85 | -0.12 | 1.17 | -0.00 | 8.17 | 0.16 | -2.02 | -0.12 | 1.17 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.98 | -0.00 | -0.03 | -0.00 | -0.02 | -0.00 | 14.98 | 0.00 | 0.04 | -0.00 | -0.02 | -0.00 |
| | | | | Viento +X exc. + | 0.06 | -1.23 | 0.01 | -0.53 | 0.00 | 0.00 | 0.06 | 0.51 | -0.01 | -0.53 | 0.00 | 0.00 |
| | | | | Viento +X exc. - | 0.06 | -1.26 | 0.00 | -0.54 | 0.00 | -0.00 | 0.06 | 0.52 | -0.00 | -0.54 | 0.00 | -0.00 |
| | | | | Viento -X exc. + | -0.06 | 1.23 | -0.01 | 0.53 | -0.00 | -0.00 | -0.06 | -0.51 | 0.01 | 0.53 | -0.00 | -0.00 |
| | | | | Viento -X exc. - | -0.06 | 1.26 | -0.00 | 0.54 | -0.00 | 0.00 | -0.06 | -0.52 | 0.00 | 0.54 | -0.00 | 0.00 |
| | | | | Viento +Y exc. + | -0.32 | -0.09 | -2.48 | -0.04 | -1.04 | -0.00 | -0.32 | 0.04 | 0.95 | -0.04 | -1.04 | -0.00 |
| | | | | Viento +Y exc. - | -0.33 | 0.08 | -2.44 | 0.03 | -1.02 | 0.00 | -0.33 | -0.03 | 0.93 | 0.03 | -1.02 | 0.00 |
| | | | | Viento -Y exc. + | 0.32 | 0.09 | 2.48 | 0.04 | 1.04 | 0.00 | 0.32 | -0.04 | -0.95 | 0.04 | 1.04 | 0.00 |
| | | | | Viento -Y exc. - | 0.33 | -0.08 | 2.44 | -0.03 | 1.02 | -0.00 | 0.33 | 0.03 | -0.93 | -0.03 | 1.02 | -0.00 |
| P5 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 24.61 | -0.10 | 2.75 | -0.04 | 1.76 | 0.00 | 23.37 | 0.01 | -3.06 | -0.04 | 1.76 | 0.00 |
| | | | | Cargas muertas | 9.27 | 0.13 | 0.72 | 0.09 | 0.48 | 0.00 | 9.27 | -0.16 | -0.85 | 0.09 | 0.48 | 0.00 |
| | | | | Sobrecarga (Uso C) | 10.90 | -0.12 | 2.45 | -0.05 | 1.56 | -0.00 | 10.90 | 0.04 | -2.70 | -0.05 | 1.56 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.97 | -0.00 | -0.03 | -0.00 | -0.02 | -0.00 | 14.97 | 0.00 | 0.04 | -0.00 | -0.02 | -0.00 |
| | | | | Viento +X exc. + | -0.01 | -1.16 | 0.04 | -0.48 | 0.02 | 0.00 | -0.01 | 0.42 | -0.02 | -0.48 | 0.02 | 0.00 |
| | | | | Viento +X exc. - | -0.02 | -1.19 | -0.03 | -0.49 | -0.01 | -0.00 | -0.02 | 0.43 | 0.01 | -0.49 | -0.01 | -0.00 |
| | | | | Viento -X exc. + | 0.01 | 1.16 | -0.04 | 0.48 | -0.02 | -0.00 | 0.01 | -0.42 | 0.02 | 0.48 | -0.02 | -0.00 |
| | | | | Viento -X exc. - | 0.02 | 1.19 | 0.03 | 0.49 | 0.01 | 0.00 | 0.02 | -0.43 | -0.01 | 0.49 | 0.01 | 0.00 |
| | | | | Viento +Y exc. + | -0.36 | -0.07 | -2.64 | -0.03 | -1.11 | -0.00 | -0.36 | 0.03 | 1.01 | -0.03 | -1.11 | -0.00 |
| | | | | Viento +Y exc. - | -0.31 | 0.08 | -2.27 | 0.04 | -0.95 | 0.00 | -0.31 | -0.03 | 0.87 | 0.04 | -0.95 | 0.00 |
| | | | | Viento -Y exc. + | 0.36 | 0.07 | 2.64 | 0.03 | 1.11 | 0.00 | 0.36 | -0.03 | -1.01 | 0.03 | 1.11 | 0.00 |
| | | | | Viento -Y exc. - | 0.31 | -0.08 | 2.27 | -0.04 | 0.95 | -0.00 | 0.31 | 0.03 | -0.87 | -0.04 | 0.95 | -0.00 |
| P6 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 25.19 | -0.07 | 2.84 | -0.01 | 1.82 | 0.00 | 23.95 | -0.03 | -3.16 | -0.01 | 1.82 | 0.00 |
| | | | | Cargas muertas | 10.53 | 0.11 | 0.75 | 0.08 | 0.49 | 0.00 | 10.53 | -0.15 | -0.87 | 0.08 | 0.49 | 0.00 |
| | | | | Sobrecarga (Uso C) | 11.34 | -0.07 | 2.56 | -0.02 | 1.63 | -0.00 | 11.34 | -0.01 | -2.82 | -0.02 | 1.63 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.98 | 0.00 | -0.03 | 0.00 | -0.02 | -0.00 | 14.98 | -0.00 | 0.03 | 0.00 | -0.02 | -0.00 |
| | | | | Viento +X exc. + | -0.03 | -1.19 | 0.07 | -0.50 | 0.03 | 0.00 | -0.03 | 0.46 | -0.03 | -0.50 | 0.03 | 0.00 |
| | | | | Viento +X exc. - | -0.05 | -1.22 | -0.06 | -0.51 | -0.02 | -0.00 | -0.05 | 0.47 | 0.02 | -0.51 | -0.02 | -0.00 |
| | | | | Viento -X exc. + | 0.03 | 1.19 | -0.07 | 0.50 | -0.03 | -0.00 | 0.03 | -0.46 | 0.03 | 0.50 | -0.03 | -0.00 |
| | | | | Viento -X exc. - | 0.05 | 1.22 | 0.06 | 0.51 | 0.02 | 0.00 | 0.05 | -0.47 | -0.02 | 0.51 | 0.02 | 0.00 |
| | | | | Viento +Y exc. + | -0.37 | -0.08 | -2.79 | -0.03 | -1.17 | -0.00 | -0.37 | 0.03 | 1.06 | -0.03 | -1.17 | -0.00 |
| | | | | Viento +Y exc. - | -0.27 | 0.09 | -2.09 | 0.04 | -0.87 | 0.00 | -0.27 | -0.03 | 0.80 | 0.04 | -0.87 | 0.00 |
| | | | | Viento -Y exc. + | 0.37 | 0.08 | 2.79 | 0.03 | 1.17 | 0.00 | 0.37 | -0.03 | -1.06 | 0.03 | 1.17 | 0.00 |
| | | | | Viento -Y exc. - | 0.27 | -0.09 | 2.09 | -0.04 | 0.87 | -0.00 | 0.27 | 0.03 | -0.80 | -0.04 | 0.87 | -0.00 |



Esfuerzos y armados de pilares, pantallas y muros

nave colegio Ribeira version a version inicial

Fecha: 23/04/15

| Soporte | Planta | Dimensión (cm) | Tramo (m) | Hipótesis | Base | | | | | | Cabeza | | | | | |
|---------|----------|----------------|-----------|---------------------|-------|----------|----------|--------|--------|---------|--------|----------|----------|--------|--------|---------|
| | | | | | N (t) | Mx (t-m) | My (t-m) | Qx (t) | Qy (t) | T (t-m) | N (t) | Mx (t-m) | My (t-m) | Qx (t) | Qy (t) | T (t-m) |
| P7 | Planta 1 | 30x50 | 0.00/3.40 | Peso propio | 17.81 | -0.53 | 2.12 | -0.31 | 1.36 | 0.00 | 16.53 | 0.53 | -2.50 | -0.31 | 1.36 | 0.00 |
| | | | | Cargas muertas | 7.61 | -1.05 | 1.71 | -0.67 | 1.11 | 0.00 | 7.61 | 1.22 | -2.07 | -0.67 | 1.11 | 0.00 |
| | | | | Sobrecarga (Uso C) | 5.04 | -0.37 | 1.80 | -0.21 | 1.15 | -0.00 | 5.04 | 0.35 | -2.10 | -0.21 | 1.15 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 15.00 | 0.00 | -0.00 | 0.00 | -0.00 | -0.00 | 15.00 | -0.00 | 0.00 | 0.00 | -0.00 | -0.00 |
| | | | | Viento +X exc. + | 0.17 | -1.02 | 0.10 | -0.39 | 0.04 | 0.00 | 0.17 | 0.31 | -0.03 | -0.39 | 0.04 | 0.00 |
| | | | | Viento +X exc. - | 0.16 | -1.05 | -0.08 | -0.40 | -0.03 | -0.00 | 0.16 | 0.31 | 0.03 | -0.40 | -0.03 | -0.00 |
| | | | | Viento -X exc. + | -0.17 | 1.02 | -0.10 | 0.39 | -0.04 | -0.00 | -0.17 | -0.31 | 0.03 | 0.39 | -0.04 | -0.00 |
| | | | | Viento -X exc. - | -0.16 | 1.05 | 0.08 | 0.40 | 0.03 | 0.00 | -0.16 | -0.31 | -0.03 | 0.40 | 0.03 | 0.00 |
| | | | | Viento +Y exc. + | -0.30 | -0.06 | -2.65 | -0.02 | -1.04 | -0.00 | -0.30 | 0.02 | 0.88 | -0.02 | -1.04 | -0.00 |
| | | | | Viento +Y exc. - | -0.21 | 0.08 | -1.72 | 0.03 | -0.67 | 0.00 | -0.21 | -0.02 | 0.57 | 0.03 | -0.67 | 0.00 |
| | | | | Viento -Y exc. + | 0.30 | 0.06 | 2.65 | 0.02 | 1.04 | 0.00 | 0.30 | -0.02 | -0.88 | 0.02 | 1.04 | 0.00 |
| | | | | Viento -Y exc. - | 0.21 | -0.08 | 1.72 | -0.03 | 0.67 | -0.00 | 0.21 | 0.02 | -0.57 | -0.03 | 0.67 | -0.00 |
| P8 | Planta 1 | 30x50 | 0.00/3.40 | Peso propio | 27.70 | 0.25 | 0.02 | 0.19 | 0.01 | 0.00 | 26.42 | -0.40 | -0.02 | 0.19 | 0.01 | 0.00 |
| | | | | Cargas muertas | 13.98 | 0.18 | -0.10 | 0.13 | -0.04 | 0.00 | 13.98 | -0.25 | 0.03 | 0.13 | -0.04 | 0.00 |
| | | | | Sobrecarga (Uso C) | 13.66 | 0.24 | 0.08 | 0.18 | 0.03 | -0.00 | 13.66 | -0.37 | -0.03 | 0.18 | 0.03 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.98 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 | 14.98 | 0.00 | -0.00 | -0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | -0.09 | -0.85 | -0.11 | -0.28 | -0.05 | 0.00 | -0.09 | 0.09 | 0.05 | -0.28 | -0.05 | 0.00 |
| | | | | Viento +X exc. - | -0.09 | -0.85 | 0.09 | -0.28 | 0.04 | -0.00 | -0.09 | 0.09 | -0.04 | -0.28 | 0.04 | -0.00 |
| | | | | Viento -X exc. + | 0.09 | 0.85 | 0.11 | 0.28 | 0.05 | -0.00 | 0.09 | -0.09 | -0.05 | 0.28 | 0.05 | -0.00 |
| | | | | Viento -X exc. - | 0.09 | 0.85 | -0.09 | 0.28 | -0.04 | 0.00 | 0.09 | -0.09 | 0.04 | 0.28 | -0.04 | 0.00 |
| | | | | Viento +Y exc. + | 0.00 | 0.00 | -1.98 | 0.00 | -0.83 | -0.00 | 0.00 | -0.00 | 0.85 | 0.00 | -0.83 | -0.00 |
| | | | | Viento +Y exc. - | 0.00 | -0.00 | -3.04 | -0.00 | -1.28 | 0.00 | 0.00 | 0.00 | 1.30 | -0.00 | -1.28 | 0.00 |
| | | | | Viento -Y exc. + | -0.00 | -0.00 | 1.98 | -0.00 | 0.83 | 0.00 | -0.00 | 0.00 | -0.85 | -0.00 | 0.83 | 0.00 |
| | | | | Viento -Y exc. - | -0.00 | 0.00 | 3.04 | 0.00 | 1.28 | -0.00 | -0.00 | -0.00 | -1.30 | 0.00 | 1.28 | -0.00 |
| P9 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 38.19 | -0.15 | 0.00 | -0.07 | -0.00 | 0.00 | 36.95 | 0.07 | 0.01 | -0.07 | -0.00 | 0.00 |
| | | | | Cargas muertas | 11.15 | -0.05 | -0.08 | -0.02 | -0.03 | 0.00 | 11.15 | 0.03 | 0.02 | -0.02 | -0.03 | 0.00 |
| | | | | Sobrecarga (Uso C) | 32.28 | -0.14 | 0.08 | -0.06 | 0.04 | -0.00 | 32.28 | 0.07 | -0.03 | -0.06 | 0.04 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 0.08 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 | 0.08 | 0.00 | -0.00 | -0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | -0.01 | -1.00 | -0.08 | -0.38 | -0.04 | 0.00 | -0.01 | 0.24 | 0.04 | -0.38 | -0.04 | 0.00 |
| | | | | Viento +X exc. - | -0.01 | -1.00 | 0.06 | -0.38 | 0.03 | -0.00 | -0.01 | 0.24 | -0.03 | -0.38 | 0.03 | -0.00 |
| | | | | Viento -X exc. + | 0.01 | 1.00 | 0.08 | 0.38 | 0.04 | -0.00 | 0.01 | -0.24 | -0.04 | 0.38 | 0.04 | -0.00 |
| | | | | Viento -X exc. - | 0.01 | 1.00 | -0.06 | 0.38 | -0.03 | 0.00 | 0.01 | -0.24 | 0.03 | 0.38 | -0.03 | 0.00 |
| | | | | Viento +Y exc. + | -0.00 | 0.00 | -2.32 | 0.00 | -1.01 | -0.00 | -0.00 | -0.00 | 1.03 | 0.00 | -1.01 | -0.00 |
| | | | | Viento +Y exc. - | -0.00 | -0.00 | -3.10 | -0.00 | -1.36 | 0.00 | -0.00 | 0.00 | 1.38 | -0.00 | -1.36 | 0.00 |
| | | | | Viento -Y exc. + | 0.00 | -0.00 | 2.32 | -0.00 | 1.01 | 0.00 | 0.00 | 0.00 | -1.03 | -0.00 | 1.01 | 0.00 |
| | | | | Viento -Y exc. - | 0.00 | 0.00 | 3.10 | 0.00 | 1.36 | -0.00 | 0.00 | -0.00 | -1.38 | 0.00 | 1.36 | -0.00 |
| P10 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 42.08 | -0.05 | -0.22 | 0.00 | -0.15 | 0.00 | 40.84 | -0.05 | 0.26 | 0.00 | -0.15 | 0.00 |
| | | | | Cargas muertas | 18.81 | -0.01 | -0.61 | 0.00 | -0.37 | 0.00 | 18.81 | -0.02 | 0.61 | 0.00 | -0.37 | 0.00 |
| | | | | Sobrecarga (Uso C) | 34.66 | -0.02 | 0.21 | 0.01 | 0.12 | -0.00 | 34.66 | -0.06 | -0.18 | 0.01 | 0.12 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | 0.03 | -0.00 | -0.00 | 0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | 0.05 | -0.99 | -0.04 | -0.37 | -0.02 | 0.00 | 0.05 | 0.23 | 0.02 | -0.37 | -0.02 | 0.00 |
| | | | | Viento +X exc. - | 0.05 | -0.99 | 0.03 | -0.37 | 0.01 | -0.00 | 0.05 | 0.23 | -0.01 | -0.37 | 0.01 | -0.00 |
| | | | | Viento -X exc. + | -0.05 | 0.99 | 0.04 | 0.37 | 0.02 | -0.00 | -0.05 | -0.23 | -0.02 | 0.37 | 0.02 | -0.00 |
| | | | | Viento -X exc. - | -0.05 | 0.99 | -0.03 | 0.37 | -0.01 | 0.00 | -0.05 | -0.23 | 0.01 | 0.37 | -0.01 | 0.00 |
| | | | | Viento +Y exc. + | 0.00 | 0.00 | -2.49 | 0.00 | -1.09 | -0.00 | 0.00 | -0.00 | 1.10 | 0.00 | -1.09 | -0.00 |
| | | | | Viento +Y exc. - | 0.00 | -0.00 | -2.90 | -0.00 | -1.27 | 0.00 | 0.00 | 0.00 | 1.28 | -0.00 | -1.27 | 0.00 |
| | | | | Viento -Y exc. + | -0.00 | -0.00 | 2.49 | -0.00 | 1.09 | 0.00 | -0.00 | 0.00 | -1.10 | -0.00 | 1.09 | 0.00 |
| | | | | Viento -Y exc. - | -0.00 | 0.00 | 2.90 | 0.00 | 1.27 | -0.00 | -0.00 | -0.00 | -1.28 | 0.00 | 1.27 | -0.00 |
| P11 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 40.01 | 1.14 | 0.16 | 0.76 | 0.09 | 0.00 | 38.78 | -1.37 | -0.16 | 0.76 | 0.09 | 0.00 |
| | | | | Cargas muertas | 18.82 | 0.59 | -0.55 | 0.38 | -0.34 | 0.00 | 18.82 | -0.68 | 0.56 | 0.38 | -0.34 | 0.00 |
| | | | | Sobrecarga (Uso C) | 33.27 | 0.97 | 0.44 | 0.65 | 0.27 | -0.00 | 33.27 | -1.17 | -0.44 | 0.65 | 0.27 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | 0.05 | -0.00 | -0.00 | 0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | -0.08 | -1.00 | 0.00 | -0.37 | 0.00 | 0.00 | -0.08 | 0.23 | -0.00 | -0.37 | 0.00 | 0.00 |
| | | | | Viento +X exc. - | -0.08 | -1.00 | -0.00 | -0.37 | -0.00 | -0.00 | -0.08 | 0.23 | -0.00 | -0.37 | -0.00 | -0.00 |
| | | | | Viento -X exc. + | 0.08 | 1.00 | -0.00 | 0.37 | -0.00 | -0.00 | 0.08 | -0.23 | 0.00 | 0.37 | -0.00 | -0.00 |
| | | | | Viento -X exc. - | 0.08 | 1.00 | 0.00 | 0.37 | 0.00 | 0.00 | 0.08 | -0.23 | 0.00 | 0.37 | 0.00 | 0.00 |
| | | | | Viento +Y exc. + | 0.00 | 0.00 | -2.70 | 0.00 | -1.18 | -0.00 | 0.00 | -0.00 | 1.20 | 0.00 | -1.18 | -0.00 |
| | | | | Viento +Y exc. - | 0.00 | -0.00 | -2.67 | -0.00 | -1.17 | 0.00 | 0.00 | 0.00 | 1.18 | -0.00 | -1.17 | 0.00 |
| | | | | Viento -Y exc. + | -0.00 | -0.00 | 2.70 | -0.00 | 1.18 | 0.00 | -0.00 | 0.00 | -1.20 | -0.00 | 1.18 | 0.00 |
| | | | | Viento -Y exc. - | -0.00 | 0.00 | 2.67 | 0.00 | 1.17 | -0.00 | -0.00 | -0.00 | -1.18 | 0.00 | 1.17 | -0.00 |
| P12 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 36.36 | -0.15 | -0.00 | -0.07 | -0.01 | 0.00 | 35.13 | 0.07 | 0.02 | -0.07 | -0.01 | 0.00 |
| | | | | Cargas muertas | 10.28 | -0.05 | -0.11 | -0.02 | -0.06 | 0.00 | 10.28 | 0.03 | 0.09 | -0.02 | -0.06 | 0.00 |
| | | | | Sobrecarga (Uso C) | 30.31 | -0.13 | 0.05 | -0.05 | 0.02 | -0.00 | 30.31 | 0.05 | -0.01 | -0.05 | 0.02 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 0.03 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 | 0.03 | 0.00 | -0.00 | -0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | 0.04 | -1.00 | 0.04 | -0.38 | 0.02 | 0.00 | 0.04 | 0.24 | -0.02 | -0.38 | 0.02 | 0.00 |
| | | | | Viento +X exc. - | 0.04 | -1.00 | -0.03 | -0.38 | -0.01 | -0.00 | 0.04 | 0.24 | 0.01 | -0.38 | -0.01 | -0.00 |
| | | | | Viento -X exc. + | -0.04 | 1.00 | -0.04 | 0.38 | -0.02 | -0.00 | -0.04 | -0.24 | 0.02 | 0.38 | -0.02 | -0.00 |
| | | | | Viento -X exc. - | -0.04 | 1.00 | 0.03 | 0.38 | 0.01 | 0.00 | -0.04 | -0.24 | -0.01 | 0.38 | 0.01 | 0.00 |
| | | | | Viento +Y exc. + | 0.00 | 0.00 | -2.87 | 0.00 | -1.26 | -0.00 | 0.00 | -0.00 | 1.27 | 0.00 | -1.26 | -0.00 |
| | | | | Viento +Y exc. - | 0.00 | -0.00 | -2.47 | -0.00 | -1.08 | 0.00 | 0.00 | 0.00 | 1.09 | -0.00 | -1.08 | 0.00 |
| | | | | Viento -Y exc. + | -0.00 | -0.00 | 2.87 | -0.00 | 1.26 | 0.00 | -0.00 | 0.00 | -1.27 | -0.00 | 1.26 | 0.00 |
| | | | | Viento -Y exc. - | -0.00 | 0.00 | 2.47 | 0.00 | 1.08 | -0.00 | -0.00 | -0.00 | -1.09 | 0.00 | 1.08 | -0.00 |
| P13 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 38.60 | -0.07 | 0.03 | -0.02 | 0.01 | 0.00 | 37.36 | -0.02 | -0.01 | -0.02 | 0.01 | 0.00 |
| | | | | Cargas muertas | 11.27 | -0.01 | -0.03 | 0.00 | -0.01 | 0.00 | 11.27 | -0.02 | 0.00 | 0.00 | -0.01 | 0.00 |
| | | | | Sobrecarga (Uso C) | 32.72 | -0.06 | 0.06 | -0.01 | 0.02 | -0.00 | 32.72 | -0.02 | -0.02 | -0.01 | 0.02 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | 0.08 | -0.00 | -0.00 | 0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | -0.02 | -1.00 | 0.08 | -0.38 | 0.03 | 0.00 | -0.02 | 0.24 | -0.04 | -0.38 | 0.03 | 0.00 |
| | | | | Viento +X exc. - | -0.02 | -1.00 | -0.06 | -0.38 | -0.03 | -0.00 | -0.02 | 0.24 | 0.03 | -0.38 | -0.03 | -0.00 |
| | | | | Viento -X exc. + | 0.02 | 1.00 | -0.08 | 0.38 | -0.03 | -0.00 | 0.02 | -0.24 | 0.04 | 0.38 | -0.03 | -0.00 |
| | | | | Viento -X exc. - | 0.02 | 1.00 | 0.06 | 0.38 | 0.03 | 0.00 | 0.02 | -0.24 | -0.03 | 0.38 | 0.03 | 0.00 |
| | | | | Viento +Y exc. + | -0.00 | 0.00 | -3.05 | 0.00 | -1.33 | -0.00 | -0.00 | -0.00 | 1.35 | 0.00 | -1.33 | -0.00 |
| | | | | Viento +Y exc. - | -0.00 | -0.00 | -2.28 | -0.00 | -1.00 | 0.00 | -0.00 | 0.00 | 1.01 | -0.00 | -1.00 | 0.00 |
| | | | | Viento -Y exc. + | 0.00 | -0.00 | 3.05 | -0.00 | 1.33 | 0.00 | 0.00 | 0.00 | -1.35 | -0.00 | 1.33 | 0.00 |
| | | | | Viento -Y exc. - | 0.00 | 0.00 | 2.28 | 0.00 | 1.00 | -0.00 | 0.00 | -0.00 | -1.01 | 0.00 | 1.00 | -0.00 |



Esfuerzos y armados de pilares, pantallas y muros

nave colegio Ribeira version a version inicial

Fecha: 23/04/15

| Soporte | Planta | Dimensión (cm) | Tramo (m) | Hipótesis | Base | | | | | | Cabeza | | | | | |
|---------|----------|----------------|-----------|---------------------|-------|----------|----------|--------|--------|---------|--------|----------|----------|--------|--------|---------|
| | | | | | N (t) | Mx (t-m) | My (t-m) | Qx (t) | Qy (t) | T (t-m) | N (t) | Mx (t-m) | My (t-m) | Qx (t) | Qy (t) | T (t-m) |
| P14 | Planta 1 | 30x50 | 0.00/3.40 | Peso propio | 27.70 | -0.44 | 0.03 | -0.25 | 0.01 | 0.00 | 26.43 | 0.42 | -0.02 | -0.25 | 0.01 | 0.00 |
| | | | | Cargas muertas | 14.04 | -0.24 | -0.03 | -0.14 | -0.01 | 0.00 | 14.04 | 0.25 | 0.01 | -0.14 | -0.01 | 0.00 |
| | | | | Sobrecarga (Uso C) | 13.64 | -0.40 | 0.06 | -0.23 | 0.03 | -0.00 | 13.64 | 0.39 | -0.03 | -0.23 | 0.03 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.98 | 0.00 | -0.00 | 0.00 | 0.00 | -0.00 | 14.98 | -0.00 | -0.00 | 0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | 0.09 | -0.85 | 0.11 | -0.28 | 0.05 | 0.00 | 0.09 | 0.09 | -0.05 | -0.28 | 0.05 | 0.00 |
| | | | | Viento +X exc.- | 0.09 | -0.85 | -0.09 | -0.28 | -0.04 | -0.00 | 0.09 | 0.09 | 0.04 | -0.28 | -0.04 | -0.00 |
| | | | | Viento -X exc. + | -0.09 | 0.85 | -0.11 | 0.28 | -0.05 | -0.00 | -0.09 | -0.09 | 0.05 | 0.28 | -0.05 | -0.00 |
| | | | | Viento -X exc.- | -0.09 | 0.85 | 0.09 | 0.28 | 0.04 | 0.00 | -0.09 | -0.09 | -0.04 | 0.28 | 0.04 | 0.00 |
| | | | | Viento +Y exc. + | -0.00 | 0.00 | -2.98 | 0.00 | -1.25 | -0.00 | -0.00 | -0.00 | 1.27 | 0.00 | -1.25 | -0.00 |
| | | | | Viento +Y exc.- | 0.00 | -0.00 | -1.93 | -0.00 | -0.81 | 0.00 | 0.00 | 0.00 | 0.83 | -0.00 | -0.81 | 0.00 |
| | | | | Viento -Y exc. + | 0.00 | -0.00 | 2.98 | -0.00 | 1.25 | 0.00 | 0.00 | 0.00 | -1.27 | -0.00 | 1.25 | 0.00 |
| | | | | Viento -Y exc.- | -0.00 | 0.00 | 1.93 | 0.00 | 0.81 | -0.00 | -0.00 | -0.00 | -0.83 | 0.00 | 0.81 | -0.00 |
| P15 | Planta 1 | 30x50 | 0.00/3.40 | Peso propio | 17.79 | 0.30 | -2.08 | 0.23 | -1.35 | 0.00 | 16.51 | -0.47 | 2.50 | 0.23 | -1.35 | 0.00 |
| | | | | Cargas muertas | 7.64 | 1.01 | -1.84 | 0.66 | -1.16 | 0.00 | 7.64 | -1.23 | 2.11 | 0.66 | -1.16 | 0.00 |
| | | | | Sobrecarga (Uso C) | 4.99 | 0.17 | -1.67 | 0.14 | -1.10 | -0.00 | 4.99 | -0.29 | 2.06 | 0.14 | -1.10 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 15.00 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 | 15.00 | 0.00 | -0.00 | -0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | -0.16 | -1.05 | -0.10 | -0.40 | -0.04 | 0.00 | -0.16 | 0.31 | 0.03 | -0.40 | -0.04 | 0.00 |
| | | | | Viento +X exc.- | -0.17 | -1.03 | 0.08 | -0.39 | 0.03 | -0.00 | -0.17 | 0.31 | -0.02 | -0.39 | 0.03 | -0.00 |
| | | | | Viento -X exc. + | 0.16 | 1.05 | 0.10 | 0.40 | 0.04 | -0.00 | 0.16 | -0.31 | -0.03 | 0.40 | 0.04 | -0.00 |
| | | | | Viento -X exc.- | 0.17 | 1.03 | -0.08 | 0.39 | -0.03 | 0.00 | 0.17 | -0.31 | 0.02 | 0.39 | -0.03 | 0.00 |
| | | | | Viento +Y exc. + | 0.22 | 0.07 | -1.77 | 0.03 | -0.69 | -0.00 | 0.22 | -0.02 | 0.59 | 0.03 | -0.69 | -0.00 |
| | | | | Viento +Y exc.- | 0.31 | -0.07 | -2.71 | -0.03 | -1.06 | 0.00 | 0.31 | 0.02 | 0.90 | -0.03 | -1.06 | 0.00 |
| | | | | Viento -Y exc. + | -0.22 | -0.07 | 1.77 | -0.03 | 0.69 | 0.00 | -0.22 | 0.02 | -0.59 | -0.03 | 0.69 | 0.00 |
| | | | | Viento -Y exc.- | -0.31 | 0.07 | 2.71 | 0.03 | 1.06 | -0.00 | -0.31 | -0.02 | -0.90 | 0.03 | -1.06 | -0.00 |
| P16 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 25.01 | -0.23 | -2.75 | -0.12 | -1.77 | 0.00 | 23.78 | 0.16 | 3.10 | -0.12 | -1.77 | 0.00 |
| | | | | Cargas muertas | 10.38 | -0.27 | -0.92 | -0.16 | -0.57 | 0.00 | 10.38 | 0.26 | 0.96 | -0.16 | -0.57 | 0.00 |
| | | | | Sobrecarga (Uso C) | 11.20 | -0.18 | -2.38 | -0.09 | -1.55 | -0.00 | 11.20 | 0.12 | 2.72 | -0.09 | -1.55 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.98 | -0.00 | 0.03 | -0.00 | 0.02 | -0.00 | 14.98 | 0.00 | -0.03 | -0.00 | 0.02 | -0.00 |
| | | | | Viento +X exc. + | 0.05 | -1.22 | -0.07 | -0.51 | -0.03 | 0.00 | 0.05 | 0.47 | 0.03 | -0.51 | -0.03 | 0.00 |
| | | | | Viento +X exc.- | 0.03 | -1.19 | 0.06 | -0.50 | 0.02 | -0.00 | 0.03 | 0.46 | -0.02 | -0.50 | 0.02 | -0.00 |
| | | | | Viento -X exc. + | -0.05 | 1.22 | 0.07 | 0.51 | 0.03 | -0.00 | -0.05 | -0.47 | -0.03 | 0.51 | 0.03 | -0.00 |
| | | | | Viento -X exc.- | -0.03 | 1.19 | -0.06 | 0.50 | -0.02 | 0.00 | -0.03 | -0.46 | 0.02 | 0.50 | -0.02 | 0.00 |
| | | | | Viento +Y exc. + | 0.28 | 0.08 | -2.12 | 0.03 | -0.89 | -0.00 | 0.28 | -0.03 | 0.81 | 0.03 | -0.89 | -0.00 |
| | | | | Viento +Y exc.- | 0.37 | -0.09 | -2.84 | -0.04 | -1.19 | 0.00 | 0.37 | 0.03 | 1.08 | -0.04 | -1.19 | 0.00 |
| | | | | Viento -Y exc. + | -0.28 | -0.08 | 2.12 | -0.03 | 0.89 | 0.00 | -0.28 | 0.03 | -0.81 | -0.03 | 0.89 | 0.00 |
| | | | | Viento -Y exc.- | -0.37 | 0.09 | 2.84 | 0.04 | 1.19 | -0.00 | -0.37 | -0.03 | -1.08 | 0.04 | -1.19 | -0.00 |
| P17 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 25.85 | 0.02 | -2.88 | 0.04 | -1.85 | 0.00 | 24.61 | -0.12 | 3.24 | 0.04 | -1.85 | 0.00 |
| | | | | Cargas muertas | 12.23 | 0.39 | -1.06 | 0.26 | -0.66 | 0.00 | 12.23 | -0.47 | 1.12 | 0.26 | -0.66 | 0.00 |
| | | | | Sobrecarga (Uso C) | 12.20 | -0.02 | -2.65 | 0.01 | -1.72 | -0.00 | 12.20 | -0.06 | 3.03 | 0.01 | -1.72 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.97 | 0.00 | 0.03 | 0.00 | 0.02 | -0.00 | 14.97 | -0.00 | -0.04 | 0.00 | 0.02 | -0.00 |
| | | | | Viento +X exc. + | 0.05 | -1.19 | -0.04 | -0.49 | -0.02 | 0.00 | 0.05 | 0.43 | 0.02 | -0.49 | -0.02 | 0.00 |
| | | | | Viento +X exc.- | 0.04 | -1.16 | 0.03 | -0.48 | 0.01 | -0.00 | 0.04 | 0.42 | -0.01 | -0.48 | 0.01 | -0.00 |
| | | | | Viento -X exc. + | -0.05 | 1.19 | 0.04 | 0.49 | 0.02 | -0.00 | -0.05 | -0.43 | -0.02 | 0.49 | 0.02 | -0.00 |
| | | | | Viento -X exc.- | -0.04 | 1.16 | -0.03 | 0.48 | -0.01 | 0.00 | -0.04 | -0.42 | 0.01 | 0.48 | -0.01 | 0.00 |
| | | | | Viento +Y exc. + | 0.30 | 0.08 | -2.28 | 0.03 | -0.96 | -0.00 | 0.30 | -0.03 | 0.87 | 0.03 | -0.96 | -0.00 |
| | | | | Viento +Y exc.- | 0.36 | -0.09 | -2.67 | -0.04 | -1.12 | 0.00 | 0.36 | 0.03 | 1.02 | -0.04 | -1.12 | 0.00 |
| | | | | Viento -Y exc. + | -0.30 | -0.08 | 2.28 | -0.03 | 0.96 | 0.00 | -0.30 | 0.03 | -0.87 | -0.03 | 0.96 | 0.00 |
| | | | | Viento -Y exc.- | -0.36 | 0.09 | 2.67 | 0.04 | 1.12 | -0.00 | -0.36 | -0.03 | -1.02 | 0.04 | -1.12 | -0.00 |
| P18 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 26.08 | -0.04 | -3.04 | 0.00 | -1.96 | 0.00 | 24.84 | -0.05 | 3.42 | 0.00 | -1.96 | 0.00 |
| | | | | Cargas muertas | 12.46 | -0.35 | -1.11 | -0.22 | -0.70 | 0.00 | 12.46 | 0.36 | 1.19 | -0.22 | -0.70 | 0.00 |
| | | | | Sobrecarga (Uso C) | 12.34 | 0.01 | -2.76 | 0.03 | -1.79 | -0.00 | 12.34 | -0.10 | 3.15 | 0.03 | -1.79 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.98 | -0.00 | 0.03 | -0.00 | 0.02 | -0.00 | 14.98 | 0.00 | -0.04 | -0.00 | 0.02 | -0.00 |
| | | | | Viento +X exc. + | -0.05 | -1.19 | -0.00 | -0.49 | -0.00 | 0.00 | -0.05 | 0.44 | 0.00 | -0.49 | -0.00 | 0.00 |
| | | | | Viento +X exc.- | -0.04 | -1.16 | -0.01 | -0.48 | -0.00 | -0.00 | -0.04 | 0.42 | 0.01 | -0.48 | -0.00 | -0.00 |
| | | | | Viento -X exc. + | 0.05 | 1.19 | 0.00 | 0.49 | 0.00 | -0.00 | 0.05 | -0.44 | -0.00 | 0.49 | 0.00 | -0.00 |
| | | | | Viento -X exc.- | 0.04 | 1.16 | 0.01 | 0.48 | 0.00 | 0.00 | 0.04 | -0.42 | -0.01 | 0.48 | 0.00 | 0.00 |
| | | | | Viento +Y exc. + | 0.33 | 0.08 | -2.48 | 0.04 | -1.04 | -0.00 | 0.33 | -0.04 | 0.95 | 0.04 | -1.04 | -0.00 |
| | | | | Viento +Y exc.- | 0.32 | -0.08 | -2.44 | -0.03 | -1.02 | 0.00 | 0.32 | 0.02 | 0.93 | -0.03 | -1.02 | 0.00 |
| | | | | Viento -Y exc. + | -0.33 | -0.08 | 2.48 | -0.04 | 1.04 | 0.00 | -0.33 | 0.04 | -0.95 | -0.04 | 1.04 | 0.00 |
| | | | | Viento -Y exc.- | -0.32 | 0.08 | 2.44 | 0.03 | 1.02 | -0.00 | -0.32 | -0.02 | -0.93 | 0.03 | -1.02 | -0.00 |
| P19 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 24.25 | -0.16 | -2.58 | -0.07 | -1.67 | 0.00 | 23.01 | 0.08 | 2.91 | -0.07 | -1.67 | 0.00 |
| | | | | Cargas muertas | 9.38 | -0.03 | -0.72 | -0.01 | -0.45 | 0.00 | 9.38 | 0.01 | 0.77 | -0.01 | -0.45 | 0.00 |
| | | | | Sobrecarga (Uso C) | 10.47 | -0.14 | -2.22 | -0.06 | -1.44 | -0.00 | 10.47 | 0.07 | 2.54 | -0.06 | -1.44 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.97 | -0.00 | 0.03 | -0.00 | 0.02 | -0.00 | 14.97 | -0.00 | -0.04 | -0.00 | 0.02 | -0.00 |
| | | | | Viento +X exc. + | 0.02 | -1.20 | 0.04 | -0.50 | 0.01 | 0.00 | 0.02 | 0.45 | -0.01 | -0.50 | 0.01 | 0.00 |
| | | | | Viento +X exc.- | 0.02 | -1.17 | -0.03 | -0.49 | -0.01 | -0.00 | 0.02 | 0.44 | 0.01 | -0.49 | -0.01 | -0.00 |
| | | | | Viento -X exc. + | -0.02 | 1.20 | -0.04 | 0.50 | -0.01 | -0.00 | -0.02 | -0.45 | 0.01 | 0.50 | -0.01 | -0.00 |
| | | | | Viento -X exc.- | -0.02 | 1.17 | 0.03 | 0.49 | 0.01 | 0.00 | -0.02 | -0.44 | -0.01 | 0.49 | 0.01 | 0.00 |
| | | | | Viento +Y exc. + | 0.36 | 0.08 | -2.64 | 0.03 | -1.11 | -0.00 | 0.36 | -0.03 | 1.01 | 0.03 | -1.11 | -0.00 |
| | | | | Viento +Y exc.- | 0.31 | -0.09 | -2.27 | -0.04 | -0.95 | 0.00 | 0.31 | 0.03 | 0.87 | -0.04 | -0.95 | 0.00 |
| | | | | Viento -Y exc. + | -0.36 | -0.08 | 2.64 | -0.03 | 1.11 | 0.00 | -0.36 | 0.03 | -1.01 | -0.03 | 1.11 | 0.00 |
| | | | | Viento -Y exc.- | -0.31 | 0.09 | 2.27 | 0.04 | 0.95 | -0.00 | -0.31 | -0.03 | -0.87 | 0.04 | 0.95 | -0.00 |
| P20 | Planta 1 | 30x50 | 0.00/3.30 | Peso propio | 25.19 | -0.06 | -2.78 | -0.01 | -1.79 | 0.00 | 23.95 | -0.04 | 3.14 | -0.01 | -1.79 | 0.00 |
| | | | | Cargas muertas | 10.55 | 0.12 | -0.86 | 0.09 | -0.54 | 0.00 | 10.55 | -0.17 | 0.93 | 0.09 | -0.54 | 0.00 |
| | | | | Sobrecarga (Uso C) | 11.32 | -0.06 | -2.42 | -0.01 | -1.57 | -0.00 | 11.32 | -0.02 | 2.76 | -0.01 | -1.57 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 14.98 | 0.00 | 0.03 | 0.00 | 0.02 | -0.00 | 14.98 | -0.00 | -0.03 | 0.00 | 0.02 | -0.00 |
| | | | | Viento +X exc. + | -0.06 | -1.22 | 0.07 | -0.51 | 0.03 | 0.00 | -0.06 | 0.47 | -0.03 | -0.51 | 0.03 | 0.00 |
| | | | | Viento +X exc.- | -0.04 | -1.19 | -0.06 | -0.50 | -0.02 | -0.00 | -0.04 | 0.46 | 0.02 | -0.50 | -0.02 | -0.00 |
| | | | | Viento -X exc. + | 0.06 | 1.22 | -0.07 | 0.51 | -0.03 | -0.00 | 0.06 | -0.47 | 0.03 | 0.51 | -0.03 | -0.00 |
| | | | | Viento -X exc.- | 0.04 | 1.19 | 0.06 | 0.50 | 0.02 | 0.00 | 0.04 | -0.46 | -0.02 | 0.50 | 0.02 | 0.00 |
| | | | | Viento +Y exc. + | 0.37 | 0.08 | -2.79 | 0.03 | -1.17 | -0.00 | 0.37 | -0.03 | 1.06 | 0.03 | -1.17 | -0.00 |
| | | | | Viento +Y exc.- | 0.27 | -0.09 | -2.09 | -0.04 | -0.87 | 0.00 | 0.27 | 0.03 | 0.80 | -0.04 | -0.87 | 0.00 |
| | | | | Viento -Y exc. + | -0.37 | -0.08 | 2.79 | -0.03 | 1.17 | 0.00 | -0.37 | 0.03 | -1.06 | -0.03 | 1.17 | 0.00 |
| | | | | Viento -Y exc.- | -0.27 | 0.09 | 2.09 | 0.04 | 0.87 | -0.00 | -0.27 | -0.03 | -0.80 | 0.04 | 0.87 | -0.00 |



| Soporte | Planta | Dimensión (cm) | Tramo (m) | Hipótesis | Base | | | | | | Cabeza | | | | | |
|---------|----------|----------------|-----------|---------------------|-------|----------|----------|--------|--------|---------|--------|----------|----------|--------|--------|---------|
| | | | | | N (t) | Mx (t·m) | My (t·m) | Qx (t) | Qy (t) | T (t·m) | N (t) | Mx (t·m) | My (t·m) | Qx (t) | Qy (t) | T (t·m) |
| P21 | Planta 1 | 30x50 | 0.00/3.40 | Peso propio | 17.81 | -0.54 | -2.06 | -0.31 | -1.34 | 0.00 | 16.53 | 0.53 | 2.49 | -0.31 | -1.34 | 0.00 |
| | | | | Cargas muertas | 7.62 | -1.07 | -1.76 | -0.68 | -1.13 | 0.00 | 7.62 | 1.23 | 2.08 | -0.68 | -1.13 | 0.00 |
| | | | | Sobrecarga (Uso C) | 5.03 | -0.37 | -1.70 | -0.21 | -1.11 | -0.00 | 5.03 | 0.35 | 2.07 | -0.21 | -1.11 | -0.00 |
| | | | | Sobrecarga (Uso G1) | 15.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | 15.00 | -0.00 | -0.00 | 0.00 | 0.00 | -0.00 |
| | | | | Viento +X exc. + | 0.16 | -1.05 | 0.10 | -0.40 | 0.04 | 0.00 | 0.16 | 0.32 | -0.03 | -0.40 | 0.04 | 0.00 |
| | | | | Viento +X exc. - | 0.17 | -1.03 | -0.08 | -0.39 | -0.03 | -0.00 | 0.17 | 0.31 | 0.02 | -0.39 | -0.03 | -0.00 |
| | | | | Viento -X exc. + | -0.16 | 1.05 | -0.10 | 0.40 | -0.04 | -0.00 | -0.16 | -0.32 | 0.03 | 0.40 | -0.04 | -0.00 |
| | | | | Viento -X exc. - | -0.17 | 1.03 | 0.08 | 0.39 | 0.03 | 0.00 | -0.17 | -0.31 | -0.02 | 0.39 | 0.03 | 0.00 |
| | | | | Viento +Y exc. + | 0.30 | 0.06 | -2.65 | 0.02 | -1.04 | -0.00 | 0.30 | -0.02 | 0.88 | 0.02 | -1.04 | -0.00 |
| | | | | Viento +Y exc. - | 0.21 | -0.08 | -1.72 | -0.03 | -0.67 | 0.00 | 0.21 | 0.02 | 0.57 | -0.03 | -0.67 | 0.00 |
| | | | | Viento -Y exc. + | -0.30 | -0.06 | 2.65 | -0.02 | 1.04 | 0.00 | -0.30 | 0.02 | -0.88 | -0.02 | 1.04 | 0.00 |
| | | | | Viento -Y exc. - | -0.21 | 0.08 | 1.72 | 0.03 | 0.67 | -0.00 | -0.21 | -0.02 | -0.57 | 0.03 | 0.67 | -0.00 |

4.- ARRANQUES DE PILARES, PANTALLAS Y MUROS POR HIPÓTESIS

▪ Nota:

Los esfuerzos están referidos a ejes locales del pilar.

| Soporte | Hipótesis | Esfuerzos en arranques | | | | | |
|---------|---------------------|------------------------|----------|----------|--------|--------|---------|
| | | N (t) | Mx (t·m) | My (t·m) | Qx (t) | Qy (t) | T (t·m) |
| P1 | Peso propio | 17.80 | 0.32 | 2.10 | 0.24 | 1.35 | 0.00 |
| | Cargas muertas | 7.67 | 1.04 | 1.62 | 0.68 | 1.07 | 0.00 |
| | Sobrecarga (Uso C) | 5.03 | 0.17 | 1.83 | 0.14 | 1.16 | -0.00 |
| | Sobrecarga (Uso G1) | 15.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 |
| | Viento +X exc. + | -0.18 | -1.03 | -0.10 | -0.39 | -0.04 | 0.00 |
| | Viento +X exc. - | -0.16 | -1.05 | 0.08 | -0.40 | 0.03 | -0.00 |
| | Viento -X exc. + | 0.18 | 1.03 | 0.10 | 0.39 | 0.04 | -0.00 |
| | Viento -X exc. - | 0.16 | 1.05 | -0.08 | 0.40 | -0.03 | 0.00 |
| | Viento +Y exc. + | -0.22 | -0.07 | -1.77 | -0.03 | -0.69 | -0.00 |
| | Viento +Y exc. - | -0.31 | 0.07 | -2.71 | 0.03 | -1.06 | 0.00 |
| | Viento -Y exc. + | 0.22 | 0.07 | 1.77 | 0.03 | 0.69 | 0.00 |
| | Viento -Y exc. - | 0.31 | -0.07 | 2.71 | -0.03 | 1.06 | -0.00 |
| P2 | Peso propio | 24.81 | -0.28 | 2.79 | -0.15 | 1.79 | 0.00 |
| | Cargas muertas | 9.51 | -0.35 | 0.59 | -0.22 | 0.41 | 0.00 |
| | Sobrecarga (Uso C) | 11.22 | -0.20 | 2.55 | -0.10 | 1.62 | -0.00 |
| | Sobrecarga (Uso G1) | 14.98 | -0.00 | -0.03 | -0.00 | -0.02 | -0.00 |
| | Viento +X exc. + | 0.06 | -1.17 | -0.08 | -0.49 | -0.03 | 0.00 |
| | Viento +X exc. - | 0.08 | -1.20 | 0.06 | -0.50 | 0.02 | -0.00 |
| | Viento -X exc. + | -0.06 | 1.17 | 0.08 | 0.49 | 0.03 | -0.00 |
| | Viento -X exc. - | -0.08 | 1.20 | -0.06 | 0.50 | -0.02 | 0.00 |
| | Viento +Y exc. + | -0.27 | -0.08 | -2.12 | -0.03 | -0.89 | -0.00 |
| | Viento +Y exc. - | -0.37 | 0.08 | -2.84 | 0.04 | -1.19 | 0.00 |
| | Viento -Y exc. + | 0.27 | 0.08 | 2.12 | 0.03 | 0.89 | 0.00 |
| | Viento -Y exc. - | 0.37 | -0.08 | 2.84 | -0.04 | 1.19 | -0.00 |



Esfuerzos y armados de pilares, pantallas y muros

nave colegio Ribeira version a version inicial

Fecha: 23/04/15

| Soporte | Hipótesis | Esfuerzos en arranques | | | | | |
|---------|---------------------|------------------------|-------------|-------------|-----------|-----------|------------|
| | | N (t) | Mx (t·m) | My (t·m) | Qx (t) | Qy (t) | T (t·m) |
| P3 | Peso propio | 28.08 | 0.33 | 3.23 | 0.24 | 2.07 | 0.00 |
| | Cargas muertas | 17.29 | 0.94 | 1.99 | 0.61 | 1.30 | 0.00 |
| | Sobrecarga (Uso C) | 11.05 | 0.07 | 2.31 | 0.07 | 1.47 | -0.00 |
| | Sobrecarga (Uso G1) | 14.97 | 0.00 | -0.03 | 0.00 | -0.02 | -0.00 |
| | Viento +X exc. + | -0.07 | -1.27 | -0.03 | -0.55 | -0.01 | 0.00 |
| | Viento +X exc. - | -0.07 | -1.30 | 0.04 | -0.57 | 0.02 | -0.00 |
| | Viento -X exc. + | 0.07 | 1.27 | 0.03 | 0.55 | 0.01 | -0.00 |
| | Viento -X exc. - | 0.07 | 1.30 | -0.04 | 0.57 | -0.02 | 0.00 |
| | Viento +Y exc. + | -0.32 | -0.08 | -2.31 | -0.03 | -0.98 | -0.00 |
| | Viento +Y exc. - | -0.36 | 0.09 | -2.70 | 0.04 | -1.14 | 0.00 |
| | Viento -Y exc. + | 0.32 | 0.08 | 2.31 | 0.03 | 0.98 | 0.00 |
| | Viento -Y exc. - | 0.36 | -0.09 | 2.70 | -0.04 | 1.14 | -0.00 |
| P4 | Peso propio | 24.07 | -0.47 | 2.51 | -0.27 | 1.61 | 0.00 |
| | Cargas muertas | 21.83 | -1.31 | 1.87 | -0.83 | 1.21 | 0.00 |
| | Sobrecarga (Uso C) | 8.17 | -0.22 | 1.85 | -0.12 | 1.17 | -0.00 |
| | Sobrecarga (Uso G1) | 14.98 | -0.00 | -0.03 | -0.00 | -0.02 | -0.00 |
| | Viento +X exc. + | 0.06 | -1.23 | 0.01 | -0.53 | 0.00 | 0.00 |
| | Viento +X exc. - | 0.06 | -1.26 | 0.00 | -0.54 | 0.00 | -0.00 |
| | Viento -X exc. + | -0.06 | 1.23 | -0.01 | 0.53 | -0.00 | -0.00 |
| | Viento -X exc. - | -0.06 | 1.26 | -0.00 | 0.54 | -0.00 | 0.00 |
| | Viento +Y exc. + | -0.32 | -0.09 | -2.48 | -0.04 | -1.04 | -0.00 |
| | Viento +Y exc. - | -0.33 | 0.08 | -2.44 | 0.03 | -1.02 | 0.00 |
| | Viento -Y exc. + | 0.32 | 0.09 | 2.48 | 0.04 | 1.04 | 0.00 |
| | Viento -Y exc. - | 0.33 | -0.08 | 2.44 | -0.03 | 1.02 | -0.00 |
| P5 | Peso propio | 24.61 | -0.10 | 2.75 | -0.04 | 1.76 | 0.00 |
| | Cargas muertas | 9.27 | 0.13 | 0.72 | 0.09 | 0.48 | 0.00 |
| | Sobrecarga (Uso C) | 10.90 | -0.12 | 2.45 | -0.05 | 1.56 | -0.00 |
| | Sobrecarga (Uso G1) | 14.97 | -0.00 | -0.03 | -0.00 | -0.02 | -0.00 |
| | Viento +X exc. + | -0.01 | -1.16 | 0.04 | -0.48 | 0.02 | 0.00 |
| | Viento +X exc. - | -0.02 | -1.19 | -0.03 | -0.49 | -0.01 | -0.00 |
| | Viento -X exc. + | 0.01 | 1.16 | -0.04 | 0.48 | -0.02 | -0.00 |
| | Viento -X exc. - | 0.02 | 1.19 | 0.03 | 0.49 | 0.01 | 0.00 |
| | Viento +Y exc. + | -0.36 | -0.07 | -2.64 | -0.03 | -1.11 | -0.00 |
| | Viento +Y exc. - | -0.31 | 0.08 | -2.27 | 0.04 | -0.95 | 0.00 |
| | Viento -Y exc. + | 0.36 | 0.07 | 2.64 | 0.03 | 1.11 | 0.00 |
| | Viento -Y exc. - | 0.31 | -0.08 | 2.27 | -0.04 | 0.95 | -0.00 |
| P6 | Peso propio | 25.19 | -0.07 | 2.84 | -0.01 | 1.82 | 0.00 |
| | Cargas muertas | 10.53 | 0.11 | 0.75 | 0.08 | 0.49 | 0.00 |
| | Sobrecarga (Uso C) | 11.34 | -0.07 | 2.56 | -0.02 | 1.63 | -0.00 |
| | Sobrecarga (Uso G1) | 14.98 | 0.00 | -0.03 | 0.00 | -0.02 | -0.00 |
| | Viento +X exc. + | -0.03 | -1.19 | 0.07 | -0.50 | 0.03 | 0.00 |
| | Viento +X exc. - | -0.05 | -1.22 | -0.06 | -0.51 | -0.02 | -0.00 |
| | Viento -X exc. + | 0.03 | 1.19 | -0.07 | 0.50 | -0.03 | -0.00 |
| | Viento -X exc. - | 0.05 | 1.22 | 0.06 | 0.51 | 0.02 | 0.00 |
| | Viento +Y exc. + | -0.37 | -0.08 | -2.79 | -0.03 | -1.17 | -0.00 |
| | Viento +Y exc. - | -0.27 | 0.09 | -2.09 | 0.04 | -0.87 | 0.00 |
| | Viento -Y exc. + | 0.37 | 0.08 | 2.79 | 0.03 | 1.17 | 0.00 |
| | Viento -Y exc. - | 0.27 | -0.09 | 2.09 | -0.04 | 0.87 | -0.00 |



Esfuerzos y armados de pilares, pantallas y muros

nave colegio Ribeira version a version inicial

Fecha: 23/04/15

| Soporte | Hipótesis | Esfuerzos en arranques | | | | | |
|---------|---------------------|------------------------|-------------|-------------|-----------|-----------|------------|
| | | N (t) | Mx (t·m) | My (t·m) | Qx (t) | Qy (t) | T (t·m) |
| P7 | Peso propio | 17.81 | -0.53 | 2.12 | -0.31 | 1.36 | 0.00 |
| | Cargas muertas | 7.61 | -1.05 | 1.71 | -0.67 | 1.11 | 0.00 |
| | Sobrecarga (Uso C) | 5.04 | -0.37 | 1.80 | -0.21 | 1.15 | -0.00 |
| | Sobrecarga (Uso G1) | 15.00 | 0.00 | -0.00 | 0.00 | -0.00 | -0.00 |
| | Viento +X exc. + | 0.17 | -1.02 | 0.10 | -0.39 | 0.04 | 0.00 |
| | Viento +X exc. - | 0.16 | -1.05 | -0.08 | -0.40 | -0.03 | -0.00 |
| | Viento -X exc. + | -0.17 | 1.02 | -0.10 | 0.39 | -0.04 | -0.00 |
| | Viento -X exc. - | -0.16 | 1.05 | 0.08 | 0.40 | 0.03 | 0.00 |
| | Viento +Y exc. + | -0.30 | -0.06 | -2.65 | -0.02 | -1.04 | -0.00 |
| | Viento +Y exc. - | -0.21 | 0.08 | -1.72 | 0.03 | -0.67 | 0.00 |
| | Viento -Y exc. + | 0.30 | 0.06 | 2.65 | 0.02 | 1.04 | 0.00 |
| | Viento -Y exc. - | 0.21 | -0.08 | 1.72 | -0.03 | 0.67 | -0.00 |
| P8 | Peso propio | 27.70 | 0.25 | 0.02 | 0.19 | 0.01 | 0.00 |
| | Cargas muertas | 13.98 | 0.18 | -0.10 | 0.13 | -0.04 | 0.00 |
| | Sobrecarga (Uso C) | 13.66 | 0.24 | 0.08 | 0.18 | 0.03 | -0.00 |
| | Sobrecarga (Uso G1) | 14.98 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | -0.09 | -0.85 | -0.11 | -0.28 | -0.05 | 0.00 |
| | Viento +X exc. - | -0.09 | -0.85 | 0.09 | -0.28 | 0.04 | -0.00 |
| | Viento -X exc. + | 0.09 | 0.85 | 0.11 | 0.28 | 0.05 | -0.00 |
| | Viento -X exc. - | 0.09 | 0.85 | -0.09 | 0.28 | -0.04 | 0.00 |
| | Viento +Y exc. + | 0.00 | 0.00 | -1.98 | 0.00 | -0.83 | -0.00 |
| | Viento +Y exc. - | 0.00 | -0.00 | -3.04 | -0.00 | -1.28 | 0.00 |
| | Viento -Y exc. + | -0.00 | -0.00 | 1.98 | -0.00 | 0.83 | 0.00 |
| | Viento -Y exc. - | -0.00 | 0.00 | 3.04 | 0.00 | 1.28 | -0.00 |
| P9 | Peso propio | 38.19 | -0.15 | 0.00 | -0.07 | -0.00 | 0.00 |
| | Cargas muertas | 11.15 | -0.05 | -0.08 | -0.02 | -0.03 | 0.00 |
| | Sobrecarga (Uso C) | 32.28 | -0.14 | 0.08 | -0.06 | 0.04 | -0.00 |
| | Sobrecarga (Uso G1) | 0.08 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | -0.01 | -1.00 | -0.08 | -0.38 | -0.04 | 0.00 |
| | Viento +X exc. - | -0.01 | -1.00 | 0.06 | -0.38 | 0.03 | -0.00 |
| | Viento -X exc. + | 0.01 | 1.00 | 0.08 | 0.38 | 0.04 | -0.00 |
| | Viento -X exc. - | 0.01 | 1.00 | -0.06 | 0.38 | -0.03 | 0.00 |
| | Viento +Y exc. + | -0.00 | 0.00 | -2.32 | 0.00 | -1.01 | -0.00 |
| | Viento +Y exc. - | -0.00 | -0.00 | -3.10 | -0.00 | -1.36 | 0.00 |
| | Viento -Y exc. + | 0.00 | -0.00 | 2.32 | -0.00 | 1.01 | 0.00 |
| | Viento -Y exc. - | 0.00 | 0.00 | 3.10 | 0.00 | 1.36 | -0.00 |
| P10 | Peso propio | 42.08 | -0.05 | -0.22 | 0.00 | -0.15 | 0.00 |
| | Cargas muertas | 18.81 | -0.01 | -0.61 | 0.00 | -0.37 | 0.00 |
| | Sobrecarga (Uso C) | 34.66 | -0.02 | 0.21 | 0.01 | 0.12 | -0.00 |
| | Sobrecarga (Uso G1) | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | 0.05 | -0.99 | -0.04 | -0.37 | -0.02 | 0.00 |
| | Viento +X exc. - | 0.05 | -0.99 | 0.03 | -0.37 | 0.01 | -0.00 |
| | Viento -X exc. + | -0.05 | 0.99 | 0.04 | 0.37 | 0.02 | -0.00 |
| | Viento -X exc. - | -0.05 | 0.99 | -0.03 | 0.37 | -0.01 | 0.00 |
| | Viento +Y exc. + | 0.00 | 0.00 | -2.49 | 0.00 | -1.09 | -0.00 |
| | Viento +Y exc. - | 0.00 | -0.00 | -2.90 | -0.00 | -1.27 | 0.00 |
| | Viento -Y exc. + | -0.00 | -0.00 | 2.49 | -0.00 | 1.09 | 0.00 |
| | Viento -Y exc. - | -0.00 | 0.00 | 2.90 | 0.00 | 1.27 | -0.00 |



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|---------|---------------------|------------------------|-------------|-------------|-----------|-----------|------------|
| | | N (t) | Mx (t·m) | My (t·m) | Qx (t) | Qy (t) | T (t·m) |
| P11 | Peso propio | 40.01 | 1.14 | 0.16 | 0.76 | 0.09 | 0.00 |
| | Cargas muertas | 18.82 | 0.59 | -0.55 | 0.38 | -0.34 | 0.00 |
| | Sobrecarga (Uso C) | 33.27 | 0.97 | 0.44 | 0.65 | 0.27 | -0.00 |
| | Sobrecarga (Uso G1) | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | -0.08 | -1.00 | 0.00 | -0.37 | 0.00 | 0.00 |
| | Viento +X exc. - | -0.08 | -1.00 | -0.00 | -0.37 | -0.00 | -0.00 |
| | Viento -X exc. + | 0.08 | 1.00 | -0.00 | 0.37 | -0.00 | -0.00 |
| | Viento -X exc. - | 0.08 | 1.00 | 0.00 | 0.37 | 0.00 | 0.00 |
| | Viento +Y exc. + | 0.00 | 0.00 | -2.70 | 0.00 | -1.18 | -0.00 |
| | Viento +Y exc. - | 0.00 | -0.00 | -2.67 | -0.00 | -1.17 | 0.00 |
| | Viento -Y exc. + | -0.00 | -0.00 | 2.70 | -0.00 | 1.18 | 0.00 |
| | Viento -Y exc. - | -0.00 | 0.00 | 2.67 | 0.00 | 1.17 | -0.00 |
| P12 | Peso propio | 36.36 | -0.15 | -0.00 | -0.07 | -0.01 | 0.00 |
| | Cargas muertas | 10.28 | -0.05 | -0.11 | -0.02 | -0.06 | 0.00 |
| | Sobrecarga (Uso C) | 30.31 | -0.13 | 0.05 | -0.05 | 0.02 | -0.00 |
| | Sobrecarga (Uso G1) | 0.03 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | 0.04 | -1.00 | 0.04 | -0.38 | 0.02 | 0.00 |
| | Viento +X exc. - | 0.04 | -1.00 | -0.03 | -0.38 | -0.01 | -0.00 |
| | Viento -X exc. + | -0.04 | 1.00 | -0.04 | 0.38 | -0.02 | -0.00 |
| | Viento -X exc. - | -0.04 | 1.00 | 0.03 | 0.38 | 0.01 | 0.00 |
| | Viento +Y exc. + | 0.00 | 0.00 | -2.87 | 0.00 | -1.26 | -0.00 |
| | Viento +Y exc. - | 0.00 | -0.00 | -2.47 | -0.00 | -1.08 | 0.00 |
| | Viento -Y exc. + | -0.00 | -0.00 | 2.87 | -0.00 | 1.26 | 0.00 |
| | Viento -Y exc. - | -0.00 | 0.00 | 2.47 | 0.00 | 1.08 | -0.00 |
| P13 | Peso propio | 38.60 | -0.07 | 0.03 | -0.02 | 0.01 | 0.00 |
| | Cargas muertas | 11.27 | -0.01 | -0.03 | 0.00 | -0.01 | 0.00 |
| | Sobrecarga (Uso C) | 32.72 | -0.06 | 0.06 | -0.01 | 0.02 | -0.00 |
| | Sobrecarga (Uso G1) | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | -0.02 | -1.00 | 0.08 | -0.38 | 0.03 | 0.00 |
| | Viento +X exc. - | -0.02 | -1.00 | -0.06 | -0.38 | -0.03 | -0.00 |
| | Viento -X exc. + | 0.02 | 1.00 | -0.08 | 0.38 | -0.03 | -0.00 |
| | Viento -X exc. - | 0.02 | 1.00 | 0.06 | 0.38 | 0.03 | 0.00 |
| | Viento +Y exc. + | -0.00 | 0.00 | -3.05 | 0.00 | -1.33 | -0.00 |
| | Viento +Y exc. - | -0.00 | -0.00 | -2.28 | -0.00 | -1.00 | 0.00 |
| | Viento -Y exc. + | 0.00 | -0.00 | 3.05 | -0.00 | 1.33 | 0.00 |
| | Viento -Y exc. - | 0.00 | 0.00 | 2.28 | 0.00 | 1.00 | -0.00 |
| P14 | Peso propio | 27.70 | -0.44 | 0.03 | -0.25 | 0.01 | 0.00 |
| | Cargas muertas | 14.04 | -0.24 | -0.03 | -0.14 | -0.01 | 0.00 |
| | Sobrecarga (Uso C) | 13.64 | -0.40 | 0.06 | -0.23 | 0.03 | -0.00 |
| | Sobrecarga (Uso G1) | 14.98 | 0.00 | -0.00 | 0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | 0.09 | -0.85 | 0.11 | -0.28 | 0.05 | 0.00 |
| | Viento +X exc. - | 0.09 | -0.85 | -0.09 | -0.28 | -0.04 | -0.00 |
| | Viento -X exc. + | -0.09 | 0.85 | -0.11 | 0.28 | -0.05 | -0.00 |
| | Viento -X exc. - | -0.09 | 0.85 | 0.09 | 0.28 | 0.04 | 0.00 |
| | Viento +Y exc. + | -0.00 | 0.00 | -2.98 | 0.00 | -1.25 | -0.00 |
| | Viento +Y exc. - | 0.00 | -0.00 | -1.93 | -0.00 | -0.81 | 0.00 |
| | Viento -Y exc. + | 0.00 | -0.00 | 2.98 | -0.00 | 1.25 | 0.00 |
| | Viento -Y exc. - | -0.00 | 0.00 | 1.93 | 0.00 | 0.81 | -0.00 |



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| Soporte | Hipótesis | Esfuerzos en arranques | | | | | |
|---------|---------------------|------------------------|-------------|-------------|-----------|-----------|------------|
| | | N (t) | Mx (t·m) | My (t·m) | Qx (t) | Qy (t) | T (t·m) |
| P15 | Peso propio | 17.79 | 0.30 | -2.08 | 0.23 | -1.35 | 0.00 |
| | Cargas muertas | 7.64 | 1.01 | -1.84 | 0.66 | -1.16 | 0.00 |
| | Sobrecarga (Uso C) | 4.99 | 0.17 | -1.67 | 0.14 | -1.10 | -0.00 |
| | Sobrecarga (Uso G1) | 15.00 | -0.00 | 0.00 | -0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | -0.16 | -1.05 | -0.10 | -0.40 | -0.04 | 0.00 |
| | Viento +X exc. - | -0.17 | -1.03 | 0.08 | -0.39 | 0.03 | -0.00 |
| | Viento -X exc. + | 0.16 | 1.05 | 0.10 | 0.40 | 0.04 | -0.00 |
| | Viento -X exc. - | 0.17 | 1.03 | -0.08 | 0.39 | -0.03 | 0.00 |
| | Viento +Y exc. + | 0.22 | 0.07 | -1.77 | 0.03 | -0.69 | -0.00 |
| | Viento +Y exc. - | 0.31 | -0.07 | -2.71 | -0.03 | -1.06 | 0.00 |
| | Viento -Y exc. + | -0.22 | -0.07 | 1.77 | -0.03 | 0.69 | 0.00 |
| | Viento -Y exc. - | -0.31 | 0.07 | 2.71 | 0.03 | 1.06 | -0.00 |
| P16 | Peso propio | 25.01 | -0.23 | -2.75 | -0.12 | -1.77 | 0.00 |
| | Cargas muertas | 10.38 | -0.27 | -0.92 | -0.16 | -0.57 | 0.00 |
| | Sobrecarga (Uso C) | 11.20 | -0.18 | -2.38 | -0.09 | -1.55 | -0.00 |
| | Sobrecarga (Uso G1) | 14.98 | -0.00 | 0.03 | -0.00 | 0.02 | -0.00 |
| | Viento +X exc. + | 0.05 | -1.22 | -0.07 | -0.51 | -0.03 | 0.00 |
| | Viento +X exc. - | 0.03 | -1.19 | 0.06 | -0.50 | 0.02 | -0.00 |
| | Viento -X exc. + | -0.05 | 1.22 | 0.07 | 0.51 | 0.03 | -0.00 |
| | Viento -X exc. - | -0.03 | 1.19 | -0.06 | 0.50 | -0.02 | 0.00 |
| | Viento +Y exc. + | 0.28 | 0.08 | -2.12 | 0.03 | -0.89 | -0.00 |
| | Viento +Y exc. - | 0.37 | -0.09 | -2.84 | -0.04 | -1.19 | 0.00 |
| | Viento -Y exc. + | -0.28 | -0.08 | 2.12 | -0.03 | 0.89 | 0.00 |
| | Viento -Y exc. - | -0.37 | 0.09 | 2.84 | 0.04 | 1.19 | -0.00 |
| P17 | Peso propio | 25.85 | 0.02 | -2.88 | 0.04 | -1.85 | 0.00 |
| | Cargas muertas | 12.23 | 0.39 | -1.06 | 0.26 | -0.66 | 0.00 |
| | Sobrecarga (Uso C) | 12.20 | -0.02 | -2.65 | 0.01 | -1.72 | -0.00 |
| | Sobrecarga (Uso G1) | 14.97 | 0.00 | 0.03 | 0.00 | 0.02 | -0.00 |
| | Viento +X exc. + | 0.05 | -1.19 | -0.04 | -0.49 | -0.02 | 0.00 |
| | Viento +X exc. - | 0.04 | -1.16 | 0.03 | -0.48 | 0.01 | -0.00 |
| | Viento -X exc. + | -0.05 | 1.19 | 0.04 | 0.49 | 0.02 | -0.00 |
| | Viento -X exc. - | -0.04 | 1.16 | -0.03 | 0.48 | -0.01 | 0.00 |
| | Viento +Y exc. + | 0.30 | 0.08 | -2.28 | 0.03 | -0.96 | -0.00 |
| | Viento +Y exc. - | 0.36 | -0.09 | -2.67 | -0.04 | -1.12 | 0.00 |
| | Viento -Y exc. + | -0.30 | -0.08 | 2.28 | -0.03 | 0.96 | 0.00 |
| | Viento -Y exc. - | -0.36 | 0.09 | 2.67 | 0.04 | 1.12 | -0.00 |
| P18 | Peso propio | 26.08 | -0.04 | -3.04 | 0.00 | -1.96 | 0.00 |
| | Cargas muertas | 12.46 | -0.35 | -1.11 | -0.22 | -0.70 | 0.00 |
| | Sobrecarga (Uso C) | 12.34 | 0.01 | -2.76 | 0.03 | -1.79 | -0.00 |
| | Sobrecarga (Uso G1) | 14.98 | -0.00 | 0.03 | -0.00 | 0.02 | -0.00 |
| | Viento +X exc. + | -0.05 | -1.19 | -0.00 | -0.49 | -0.00 | 0.00 |
| | Viento +X exc. - | -0.04 | -1.16 | -0.01 | -0.48 | -0.00 | -0.00 |
| | Viento -X exc. + | 0.05 | 1.19 | 0.00 | 0.49 | 0.00 | -0.00 |
| | Viento -X exc. - | 0.04 | 1.16 | 0.01 | 0.48 | 0.00 | 0.00 |
| | Viento +Y exc. + | 0.33 | 0.08 | -2.48 | 0.04 | -1.04 | -0.00 |
| | Viento +Y exc. - | 0.32 | -0.08 | -2.44 | -0.03 | -1.02 | 0.00 |
| | Viento -Y exc. + | -0.33 | -0.08 | 2.48 | -0.04 | 1.04 | 0.00 |
| | Viento -Y exc. - | -0.32 | 0.08 | 2.44 | 0.03 | 1.02 | -0.00 |



| Soporte | Hipótesis | Esfuerzos en arranques | | | | | |
|---------|---------------------|------------------------|-------------|-------------|-----------|-----------|------------|
| | | N (t) | Mx (t·m) | My (t·m) | Qx (t) | Qy (t) | T (t·m) |
| P19 | Peso propio | 24.25 | -0.16 | -2.58 | -0.07 | -1.67 | 0.00 |
| | Cargas muertas | 9.38 | -0.03 | -0.72 | -0.01 | -0.45 | 0.00 |
| | Sobrecarga (Uso C) | 10.47 | -0.14 | -2.22 | -0.06 | -1.44 | -0.00 |
| | Sobrecarga (Uso G1) | 14.97 | -0.00 | 0.03 | -0.00 | 0.02 | -0.00 |
| | Viento +X exc. + | 0.02 | -1.20 | 0.04 | -0.50 | 0.01 | 0.00 |
| | Viento +X exc. - | 0.02 | -1.17 | -0.03 | -0.49 | -0.01 | -0.00 |
| | Viento -X exc. + | -0.02 | 1.20 | -0.04 | 0.50 | -0.01 | -0.00 |
| | Viento -X exc. - | -0.02 | 1.17 | 0.03 | 0.49 | 0.01 | 0.00 |
| | Viento +Y exc. + | 0.36 | 0.08 | -2.64 | 0.03 | -1.11 | -0.00 |
| | Viento +Y exc. - | 0.31 | -0.09 | -2.27 | -0.04 | -0.95 | 0.00 |
| | Viento -Y exc. + | -0.36 | -0.08 | 2.64 | -0.03 | 1.11 | 0.00 |
| | Viento -Y exc. - | -0.31 | 0.09 | 2.27 | 0.04 | 0.95 | -0.00 |
| P20 | Peso propio | 25.19 | -0.06 | -2.78 | -0.01 | -1.79 | 0.00 |
| | Cargas muertas | 10.55 | 0.12 | -0.86 | 0.09 | -0.54 | 0.00 |
| | Sobrecarga (Uso C) | 11.32 | -0.06 | -2.42 | -0.01 | -1.57 | -0.00 |
| | Sobrecarga (Uso G1) | 14.98 | 0.00 | 0.03 | 0.00 | 0.02 | -0.00 |
| | Viento +X exc. + | -0.06 | -1.22 | 0.07 | -0.51 | 0.03 | 0.00 |
| | Viento +X exc. - | -0.04 | -1.19 | -0.06 | -0.50 | -0.02 | -0.00 |
| | Viento -X exc. + | 0.06 | 1.22 | -0.07 | 0.51 | -0.03 | -0.00 |
| | Viento -X exc. - | 0.04 | 1.19 | 0.06 | 0.50 | 0.02 | 0.00 |
| | Viento +Y exc. + | 0.37 | 0.08 | -2.79 | 0.03 | -1.17 | -0.00 |
| | Viento +Y exc. - | 0.27 | -0.09 | -2.09 | -0.04 | -0.87 | 0.00 |
| | Viento -Y exc. + | -0.37 | -0.08 | 2.79 | -0.03 | 1.17 | 0.00 |
| | Viento -Y exc. - | -0.27 | 0.09 | 2.09 | 0.04 | 0.87 | -0.00 |
| P21 | Peso propio | 17.81 | -0.54 | -2.06 | -0.31 | -1.34 | 0.00 |
| | Cargas muertas | 7.62 | -1.07 | -1.76 | -0.68 | -1.13 | 0.00 |
| | Sobrecarga (Uso C) | 5.03 | -0.37 | -1.70 | -0.21 | -1.11 | -0.00 |
| | Sobrecarga (Uso G1) | 15.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 |
| | Viento +X exc. + | 0.16 | -1.05 | 0.10 | -0.40 | 0.04 | 0.00 |
| | Viento +X exc. - | 0.17 | -1.03 | -0.08 | -0.39 | -0.03 | -0.00 |
| | Viento -X exc. + | -0.16 | 1.05 | -0.10 | 0.40 | -0.04 | -0.00 |
| | Viento -X exc. - | -0.17 | 1.03 | 0.08 | 0.39 | 0.03 | 0.00 |
| | Viento +Y exc. + | 0.30 | 0.06 | -2.65 | 0.02 | -1.04 | -0.00 |
| | Viento +Y exc. - | 0.21 | -0.08 | -1.72 | -0.03 | -0.67 | 0.00 |
| | Viento -Y exc. + | -0.30 | -0.06 | 2.65 | -0.02 | 1.04 | 0.00 |
| | Viento -Y exc. - | -0.21 | 0.08 | 1.72 | 0.03 | 0.67 | -0.00 |

5.- PÉSIMOS DE PILARES, PANTALLAS Y MUROS

5.1.- Pilares

| Resumen de las comprobaciones | | | | | | | | | | | | | |
|-------------------------------|-------------|------------|-----------|----------|-------------------|-------|-----------|----------|--------|--------|--------|------------|--------|
| Pilares | Planta | Tramo (m) | Dimensión | Posición | Esfuerzos pésimos | | | | | | Pésima | Aprov. (%) | Estado |
| | | | | | Naturaleza | N (t) | Mxx (t·m) | My (t·m) | Qx (t) | Qy (t) | | | |
| P1 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 40.13 | -11.00 | -1.91 | -1.34 | 6.08 | N,M | 60.2 | Cumple |
| | | | | Cabeza | G, Q, V | 38.40 | 9.68 | 2.63 | -1.34 | 6.08 | Q | 59.9 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 40.13 | -11.00 | -1.91 | -1.34 | 6.08 | N,M | 60.2 | Cumple |
| P2 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 58.68 | -11.51 | 1.18 | 0.65 | 6.45 | N,M | 55.4 | Cumple |
| | | | | Cabeza | G, Q, V | 57.01 | 9.77 | -0.97 | 0.65 | 6.45 | Q | 52.7 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 58.68 | -11.51 | 1.18 | 0.65 | 6.45 | N,M | 55.4 | Cumple |
| P3 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 73.39 | -13.52 | -1.64 | -1.16 | 7.80 | N,M | 65.8 | Cumple |
| | | | | Cabeza | G, Q, V | 71.72 | 12.22 | 2.17 | -1.16 | 7.80 | N,M | 62.2 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 73.39 | -13.52 | -1.64 | -1.16 | 7.80 | N,M | 65.8 | Cumple |
| P4 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 71.04 | -11.50 | 2.77 | 1.67 | 6.57 | N,M | 61.6 | Cumple |
| | | | | Cabeza | G, Q, V | 69.36 | 10.20 | -2.63 | 1.56 | 6.59 | N,M | 56.0 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 71.04 | -11.50 | 2.77 | 1.67 | 6.57 | N,M | 61.6 | Cumple |



Esfuerzos y armados de pilares, pantallas y muros

nave colegio Ribeira version a version inicial

Fecha: 23/04/15

| Resumen de las comprobaciones | | | | | | | | | | | | | |
|-------------------------------|-------------|------------|-----------|----------|-------------------|--------|-----------|-----------|--------|--------|--------|------------|--------|
| Pilares | Planta | Tramo (m) | Dimensión | Posición | Esfuerzos pésimos | | | | | | Pésima | Aprov. (%) | Estado |
| | | | | | Naturaleza | N (t) | Mxx (t-m) | Myy (t-m) | Qx (t) | Qy (t) | | | |
| P5 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 57.73 | -11.22 | -0.03 | -0.07 | 6.32 | Q | 51.2 | Cumple |
| | | | | Cabeza | G, Q, V | 56.06 | 9.63 | 0.20 | -0.07 | 6.32 | Q | 51.9 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 57.73 | -11.22 | -0.03 | -0.07 | 6.32 | N,M | 50.8 | Cumple |
| P6 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 60.68 | -11.72 | -0.11 | -0.12 | 6.58 | N,M | 53.3 | Cumple |
| | | | | Cabeza | G, Q, V | 59.00 | 10.00 | 0.29 | -0.12 | 6.58 | Q | 52.7 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 60.68 | -11.72 | -0.11 | -0.12 | 6.58 | N,M | 53.3 | Cumple |
| P7 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 40.05 | -11.03 | 2.43 | 1.51 | 6.10 | N,M | 63.1 | Cumple |
| | | | | Cabeza | G, Q, V | 38.33 | 9.70 | -2.71 | 1.51 | 6.10 | Q | 60.3 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 40.05 | -11.03 | 2.43 | 1.51 | 6.10 | N,M | 63.1 | Cumple |
| P8 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 70.61 | 4.59 | -0.83 | -0.62 | -1.92 | N,M | 33.1 | Cumple |
| | | | | Cabeza | G, V | 40.40 | -1.97 | 0.64 | -0.31 | -1.95 | Q | 18.6 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 70.61 | 4.59 | -0.83 | -0.62 | -1.92 | N,M | 33.1 | Cumple |
| | | | | Pie | G, V | 56.27 | 4.67 | -0.58 | -0.43 | -1.95 | N,M | 28.9 | Cumple |
| P9 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 115.03 | -2.81 | 2.30 | 0.22 | 1.23 | N,M | 46.8 | Cumple |
| | | | | Cabeza | G, V | 48.10 | -2.09 | -0.10 | 0.09 | -2.07 | N,M | 19.7 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 115.03 | -2.81 | 2.30 | 0.22 | 1.23 | N,M | 46.8 | Cumple |
| | | | | Pie | G, V | 66.60 | 4.76 | 0.27 | 0.12 | -2.08 | N,M | 31.6 | Cumple |
| P10 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 134.19 | 3.04 | 2.68 | -0.03 | -1.50 | N,M | 54.3 | Cumple |
| | | | | Cabeza | G, V | 59.66 | -2.80 | 0.07 | -0.01 | -2.42 | N,M | 24.8 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 134.19 | 3.04 | 2.68 | -0.03 | -1.50 | N,M | 54.3 | Cumple |
| | | | | Pie | G, V | 82.21 | 5.47 | 0.07 | -0.01 | -2.60 | N,M | 37.8 | Cumple |
| P11 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 129.40 | -0.12 | -4.69 | -2.86 | 0.07 | N,M | 57.6 | Cumple |
| | | | | Cabeza | G, V | 57.60 | -2.20 | 2.05 | -1.15 | -2.02 | N,M | 27.5 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 129.40 | -0.12 | -4.69 | -2.86 | 0.07 | N,M | 57.6 | Cumple |
| | | | | Pie | G, V | 79.43 | 4.59 | -2.34 | -1.55 | -2.10 | N,M | 39.3 | Cumple |
| P12 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 108.43 | 2.67 | 2.17 | 0.20 | -1.20 | N,M | 44.1 | Cumple |
| | | | | Cabeza | G, V | 45.40 | -2.02 | -0.10 | 0.09 | -1.95 | N,M | 18.7 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 108.43 | 2.67 | 2.17 | 0.20 | -1.20 | N,M | 44.1 | Cumple |
| | | | | Pie | G, V | 62.97 | 4.47 | 0.27 | 0.12 | -1.98 | N,M | 29.8 | Cumple |
| P13 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 116.40 | -2.83 | 2.33 | 0.04 | 1.24 | N,M | 47.3 | Cumple |
| | | | | Cabeza | G, V | 48.63 | 2.04 | 0.03 | 0.02 | 2.00 | N,M | 19.8 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 116.40 | -2.83 | 2.33 | 0.04 | 1.24 | N,M | 47.3 | Cumple |
| | | | | Pie | G, V | 67.32 | -4.57 | 0.11 | 0.02 | 2.00 | N,M | 31.2 | Cumple |
| P14 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 70.68 | -4.54 | 1.34 | 0.78 | 1.91 | N,M | 33.9 | Cumple |
| | | | | Cabeza | G, V | 40.47 | 1.91 | -0.67 | 0.39 | 1.88 | Q | 18.1 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 70.68 | -4.54 | 1.34 | 0.78 | 1.91 | N,M | 33.9 | Cumple |
| | | | | Pie | G, Q, V | 56.07 | -4.54 | 1.10 | 0.64 | 1.91 | N,M | 29.5 | Cumple |
| P15 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 40.03 | 11.12 | -1.84 | -1.29 | -6.14 | N,M | 60.7 | Cumple |
| | | | | Cabeza | G, Q, V | 38.31 | -9.74 | 2.56 | -1.29 | -6.14 | Q | 60.4 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 40.03 | 11.12 | -1.84 | -1.29 | -6.14 | N,M | 60.7 | Cumple |
| P16 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 60.10 | 11.72 | 0.99 | 0.53 | -6.57 | N,M | 55.5 | Cumple |
| | | | | Cabeza | G, Q, V | 58.43 | -9.96 | -0.74 | 0.53 | -6.57 | Q | 53.0 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 60.10 | 11.72 | 0.99 | 0.53 | -6.57 | N,M | 55.5 | Cumple |
| P17 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 64.75 | 12.10 | -0.41 | -0.37 | -6.88 | N,M | 55.9 | Cumple |
| | | | | Cabeza | G, Q, V | 63.08 | -10.60 | 0.82 | -0.37 | -6.88 | Q | 53.3 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 64.75 | 12.10 | -0.41 | -0.37 | -6.88 | N,M | 55.9 | Cumple |
| P18 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 65.48 | 12.17 | 0.64 | 0.30 | -7.00 | N,M | 56.9 | Cumple |
| | | | | Cabeza | G, Q, V | 63.82 | -10.96 | -0.26 | 0.20 | -7.02 | Q | 54.1 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 65.48 | 12.17 | 0.64 | 0.30 | -7.00 | N,M | 56.9 | Cumple |
| | | | | Pie | G, Q, V | 70.85 | 11.98 | 0.44 | 0.21 | -7.21 | N,M | 56.2 | Cumple |
| P19 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 56.93 | 10.75 | 0.30 | 0.14 | -6.03 | N,M | 49.5 | Cumple |
| | | | | Cabeza | G, Q, V | 55.26 | -9.15 | -0.15 | 0.14 | -6.03 | Q | 49.9 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 56.93 | 10.75 | 0.30 | 0.14 | -6.03 | N,M | 49.5 | Cumple |
| P20 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 60.69 | 11.64 | -0.14 | -0.15 | -6.56 | N,M | 53.1 | Cumple |
| | | | | Cabeza | G, Q, V | 59.02 | -9.99 | 0.34 | -0.15 | -6.56 | Q | 52.5 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 60.69 | 11.64 | -0.14 | -0.15 | -6.56 | N,M | 53.1 | Cumple |



Esfuerzos y armados de pilares, pantallas y muros

nave colegio Ribeira version a version inicial

Fecha: 23/04/15

| Resumen de las comprobaciones | | | | | | | | | | | | | |
|---|-------------|------------|-----------|----------|-------------------|-------|-----------|-----------|--------|--------|--------|------------|--------|
| Pilares | Planta | Tramo (m) | Dimensión | Posición | Esfuerzos p simos | | | | | | P sima | Aprov. (%) | Estado |
| | | | | | Naturaleza | N (t) | Mxx (t-m) | Myy (t-m) | Qx (t) | Qy (t) | | | |
| P21 | Planta 1 | 0.00/4.00 | 30x50 | Pie | G, Q, V | 40.06 | 10.91 | 2.46 | 1.52 | -6.05 | N,M | 62.6 | Cumple |
| | | | | Cabeza | G, Q, V | 38.34 | -9.66 | -2.72 | 1.52 | -6.05 | Q | 59.9 | Cumple |
| | Planta baja | -0.30/0.00 | 30x50 | Pie | G, Q, V | 40.06 | 10.91 | 2.46 | 1.52 | -6.05 | N,M | 62.6 | Cumple |
| Notas: N,M: Estado l mite de agotamiento frente a solicitaciones normales Q: Estado l mite de agotamiento frente a cortante | | | | | | | | | | | | | |

6.- LISTADO DE MEDICI N DE PILARES

| Resumen de medici n - Planta 1 | | | | | | | |
|--|------------------|----------------|-----------------------------|----------------------------|------------------|------------------|-----------------|
| Pilares | Dimensiones (cm) | Encofrado (m ) | Hormig n HA-25, Yc=1.5 (m ) | Armaduras B 500 S, Ys=1.15 | | | Cuant a (kg/m ) |
| | | | | Longitudinal  16 (kg) | Estribos  8 (kg) | Total +10 % (kg) | |
| P1, P7, P8, P14, P15 y P21 | 30x50 | 32.64 | 3.06 | 225.6 | 124.2 | 384.8 | 114.31 |
| P2, P3, P4, P5, P6, P9, P10, P11, P12, P13, P16, P17, P18, P19 y P20 | 30x50 | 79.20 | 7.50 | 564.0 | 310.5 | 962.0 | 116.60 |
| Total | | 111.84 | 10.56 | 789.6 | 434.7 | 1346.8 | 115.94 |

7.- SUMATORIO DE ESFUERZOS DE PILARES, PANTALLAS Y MUROS POR HIP TESIS Y PLANTA

-   S lo se tienen en cuenta los esfuerzos de pilares, muros y pantallas, por lo que si la obra tiene vigas con vinculaci n exterior, vigas inclinadas, diagonales o estructuras 3D integradas, los esfuerzos de dichos elementos no se muestran en el siguiente listado.
-   Este listado es de utilidad para conocer las cargas actuantes por encima de la cota de la base de los soportes sobre una planta, por lo que para casos tales como pilares apeados traccionados, los esfuerzos de dichos pilares tendr n la influencia no s lo de las cargas por encima sino tambi n la de las cargas que recibe de plantas inferiores.

7.1.- Resumido

| Valores referidos al origen (X=0.00, Y=0.00) | | | | | | | | |
|--|----------|---------------------|--------|----------|----------|--------|--------|---------|
| Planta | Cota (m) | Hip tesis | N (t) | Mx (t-m) | My (t-m) | Qx (t) | Qy (t) | T (t-m) |
| Planta 1 | 4.00 | Peso propio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Cargas muertas | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Sobrecarga (Uso C) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Sobrecarga (Uso G1) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Viento +X exc.+ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Viento +X exc.- | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Viento -X exc.+ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Viento -X exc.- | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Viento +Y exc.+ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Viento +Y exc.- | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Viento -Y exc.+ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | Viento -Y exc.- | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Planta baja | 0.00 | Peso propio | 574.98 | 13293 | 7065.1 | -0.00 | 0.00 | 0.00 |
| | | Cargas muertas | 252.32 | 5753.9 | 2993.0 | -0.00 | 0.00 | 0.00 |
| | | Sobrecarga (Uso C) | 320.85 | 7421.5 | 3982.8 | -0.00 | 0.00 | 0.00 |
| | | Sobrecarga (Uso G1) | 240.00 | 5567.5 | 2950.4 | -0.00 | -0.00 | -0.00 |
| | | Viento +X exc.+ | 0.00 | 36.26 | -0.00 | 9.07 | 0.00 | -119.1 |
| | | Viento +X exc.- | 0.00 | 36.26 | -0.00 | 9.07 | 0.00 | -103.8 |
| | | Viento -X exc.+ | -0.00 | -36.26 | 0.00 | -9.07 | -0.00 | 119.06 |
| | | Viento -X exc.- | -0.00 | -36.26 | 0.00 | -9.07 | -0.00 | 103.83 |
| | | Viento +Y exc.+ | 0.00 | 0.00 | 87.00 | 0.00 | 21.75 | 543.85 |
| | | Viento +Y exc.- | 0.00 | 0.00 | 87.00 | -0.00 | 21.75 | 461.09 |
| | | Viento -Y exc.+ | -0.00 | -0.00 | -87.00 | -0.00 | -21.75 | -543.9 |
| | | Viento -Y exc.- | -0.00 | -0.00 | -87.00 | 0.00 | -21.75 | -461.1 |